EDITED BY JOHN R. SHOOK AND HUGH P. McDONALD

F.C.S. Schiller

ON PRAGMATISM AND HUMANISM

SELECTED WRITINGS, 1891–1939

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Introduction

THE LIFE AND CAREER OF F. C. S. SCHILLER

John R. Shook

I

The New World's only native-born philosophy, pragmatism, was surprised to find its most ardent and potent ally at one of the Old World's oldest universities. F. C. S. Schiller advanced his own original and sophisticated pragmatist and humanist philosophy from his post at Oxford University's Corpus Christi College during the early twentieth century. Widely considered as the equal of his collaborators William James and John Dewey in that era, Schiller energized European debates over logic, science, truth, and reality. Many critical contemporaries, including Bertrand Russell and F. H. Bradley, engaged Schiller in vigorous debates spanning many years and several philosophy journals.

His peers recognized his stature and valued his participation: Schiller was Treasurer of the Mind Association and guided *Mind* through some difficult years (1900–1926); President of the Aristotelian Society (1921–1922); President of the British Society for Psychical Research (1914, following William James and Henri Bergson); and a Fellow of the British Academy (1926). Schiller was one of three British representatives on the international committee for the 1908 World Congress of Philosophy, and was Treasurer for the World Congress of Philosophy in London in 1915.

Schiller contributed much to the philosophical energy and academic atmosphere of his adopted homeland.

Schiller was a prolific author, publishing fifteen books and over one hundred articles. He had a special talent for incisive and polemical disputation, which sometimes overshadowed his prodigious facility with epistemology, metaphysics, philosophical psychology, and value theory. Of special significance in light of the course of twentieth century philosophy were his contributions to philosophy of science and philosophy of logic. In many ways he anticipated key developments of later analytic philosophy's work in these two areas.

Besides Schiller's immense fertility, which stimulated pragmatism to new advances, he was philosophy's foremost representative of humanism during his career. Spanning the long gap between late 19th century German thinkers who developed "humanism" as a intellectual category, and the American Humanists of the 1930s and 40s, Schiller almost singlehandedly sustained humanism as a visible and viable philosophical option. When James announced in 1897 that henceforth his philosophy would be labeled as *pragmatism*, Schiller quickly pronounced himself a pragmatist too. Before his death in 1910, William James asked Schiller to assume the leadership of the young pragmatism movement. However, Schiller always retained the label of *humanism* for his entire philosophy, stressing that the environment, knowledge, and values available to human beings must always be the creation of *human* choices and activities.

Schiller's work remains a fertile source of ideas for the continued advancement of humanism and pragmatism today, as the forty-two selected chapters reveal. The introductions to the seven sections, composed by Hugh McDonald, discuss the main contentions of the selections. This introduction gives an overview of Schiller's life and career, highlighting relations with other pragmatists and also his critics.

II

Ferdinand Canning Scott Schiller was born on 16 August 1864 in Othmarschen in the Duchy of Holstein, then a province of Denmark. Holstein was soon engulfed by the Prussian Empire (Othmarschen is now a district in the city of Hamburg), and Schiller was a German citizen for the rest of his life. His father Ferdinand was a native German but an ardent Anglophile. "Canning" and "Scott" were early eighteenth century English literary figures (Schiller himself preferred to be called "Canning" and signed his letters with that name). Wealthy from his commercial business with India, Schiller's father gave his three sons English educations; Schiller

went to a children's boarding school when he was ten. After attending Rugby from 1878 to 1882, he entered Balliol College of Oxford University. At Balliol, Master Benjamin Jowett was promoting the study of German idealism and T. H. Green's absolute idealism pervaded philosophical instruction. Schiller was awarded firsts in Classical Moderations and in Greats, and also the Taylorian Scholarship for German, in 1887. After tutoring German at Eton, Schiller returned to Oxford for his MA degree, which was awarded in 1891.[1]

Schiller's first book, *Riddles of the Sphinx: A Study in the Philosophy of Evolution* (published anonymously by "A Troglodyte" in 1891), sold fairly well and soon required a second edition (and also a third in 1910). But no philosophy opening could be secured, and so Schiller looked to America. At Cornell University, philosopher J. E. Creighton and psychologist E. B. Titchener were favorably inclined towards English scholarship, so Schiller served as an instructor in logic and metaphysics there from 1893 until 1897. It was during this time that Schiller began his close friendship with William James, sharing many ideas in correspondence and visiting James's home several times. Before completing the requirements for a Ph.D., Corpus Christi called him back home to Oxford in 1897, to be Assistant Tutor and Fellow of the College. Schiller was promoted to Tutor in 1903, received the degree of D.Sc. from Oxford in 1906 and taught at Corpus Christi until 1926.

At the invitation of the University of Southern California, Schiller began lecturing at its School of Philosophy in 1926. Schiller joined Ralph Tyler Flewelling, a personalist trained by Borden Parker Bowne at Boston University. Others in the department were also sympathetic with either pragmatism or personalism or both, creating the ideal supportive environment that had been impossible at Oxford. The department operated a philosophy journal, *The Personalist*, where Schiller placed most of his later articles. Schiller taught at USC for half the year, spending the other half-year at Corpus Christi where he retained his status as an Extraordinary Fellow and kept residence. In 1929 Schiller was appointed Professor of Philosophy at USC. In 1935 Schiller married Louise Strang, also on the USC faculty, and severed his relationship with Corpus Christi. Schiller was awarded an honorary LL.D. from USC in 1935. He lectured at USC and other California colleges in his final years. Schiller died on 6 August 1937 in Los Angeles, California.

III

Pragmatic ideas are found in Schiller's earliest writings, but like Dewey, Schiller was heavily indebted for further inspiration from William James.

Schiller's 1891 book *Riddles of the Sphinx: A Study in the Philosophy of Evolution* defended the full legitimacy of teleological explanations for evolutionary processes in general and for intelligent agents in particular. Schiller then discovered similar themes of personalism and a teleological understanding of mind in James's *The Principles of Psychology*. Schiller soon became James's devoted admirer, chief advocate, and staunch defender. James, for his part, was impressed by his new protégé as they got to know each other well during the mid-1890s. James wrote to a friend in 1897 about Schiller: "Have you read F. C. S. Schiller's Riddles of the Sphinx. . . . A pluralistic theistic book, of great vigor and constructive originality. . . . His book is that of a young man and crude and disproportioned but very suggestive, & quite in the lines which I incline to tread."[2] Schiller and James had no difficulty agreeing that religion must be pragmatically justified or not at all. The notion of a divine mind guiding the world-process never completely dropped out from Schiller's philosophy, but it was gradually deemphasized. Admitting that the core beliefs of the world's faiths can all have sufficient pragmatic justification, Schiller's theism receded from importance in his metaphysics. Consistent with his hostility towards absolute idealism and any type of pantheism, Schiller's personalism advanced to the forefront by the time he brought together the chapters of his second book, the 1903 *Humanism*.

Like James of the *Principles of Psychology*, Schiller maintained that streams of consciousness are always *personal*, having a focus and center that grasps all of present consciousness in a unified whole. Unlike the later James, whose radical empiricism struggled with various attempts to account for multiple people knowing each other and external objects, Schiller was content to rely on the pragmatic postulation of such things beyond one's experience. Like all theories of deep antiquity of the human race and indeed of pre-human species, we simply assume without question basic postulates acquired in childhood such as the external world of space-time and causality, the existence of other minds, and similarly common-sense notions essential for survival. This evolutionary account of our fundamental intellectual framework need not determine in detail which postulates have more to do with brain structure and which involve cultural transmission, and Schiller himself spent little time on this issue. It was enough for Schiller to proclaim that all such postulates are taken to be true simply because they have proven their practical worth for so many for so long a time. When James announced that henceforth his philosophy would be called *pragmatism*, Schiller quickly pronounced himself a pragmatist too, but always retained the label of *humanism* for his entire philosophy.

Besides his fruitful alliance with James, Schiller was quite fortunate in his supportive relationships with other philosophers and also with philosophy

journals open to his articles. Because of his friendly connections across the philosophical world, Schiller had ready access to *Mind*, *Proceedings of the Aristotelian Society*, the *Hibbert Journal*, and the *Journal of Philosophy*. His open rebellion against the dominant absolute idealism conducted him into a small fraternity of self-styled "personal" idealists in England who together succeeded in making a considerable impact on the British philosophical landscape. Andrew Seth Pringle-Pattison (1856–1931), G. F. Stout (1860–1944), Hastings Rashdall (1858–1924) and Schiller were among the most prominent dissenters. Rashdall and Schiller, together with six more Oxford personalists from the disciplines of philosophy, psychology, and religion, contributed essays to *Personal Idealism* (1902), edited by Henry Sturt. Schiller and Sturt founded the Oxford Philosophical Society in 1898. Sturt was notorious for his public contempt for the excessive rationalism inherent in British absolute idealism and embodied in Oxford's mode of education. Schiller supported this attack, arguing in his contribution "Axioms as Postulates" that scientific and logical principles are human constructions imposed on reality for practical ends. Schiller later devoted a book, *Formal Logic* (1912), to deploring the deleterious effects, both personal and social, of promulgating deductive logic as the only mode of thought. Besides promoting social authoritarianism, deductive rationalism in philosophy encourages the mistaken view that logical principles are transhuman entities standing in judgment upon actual psychological processes. Schiller's stance on the inherently psychological nature of logic brought him into agreement with Alfred Sidgwick (1850–1943), an early pioneer of informal logic and argumentation.

Interestingly, there is little evidence that Dewey's work on epistemology, scientific method, or naturalism had any appreciable influence on Schiller. Although Schiller was pleased to reference some of Dewey's writings over the years, Schiller's work does not display a distinctly Deweyan imprint anywhere. To the extent that Dewey evidently continued the pragmatic line begun by James, Schiller approved, and apparently he did not digest much of the rest of Dewey's work. Characteristically, Schiller forged ahead without waiting for Dewey or anyone else. On the topics of logic and scientific method, for example, Dewey's mature views were not published until 1938 in his *Logic: The Theory of Inquiry*, several years after Schiller's *Logic for Use: An Introduction to the Voluntarist Theory of Knowledge* (1929). Schiller's and Dewey's pragmatisms are quite compatible and mutually supportive when taken together. Dewey's standpoint of social psychology relocates the burden of knowledge away from the individual and depicts science as a cultural achievement and force. From Dewey's perspective, Schiller's personalism retained an outdated fixation on values as exclusively individualized and subjective, and too remote from their origins in human transactions with nature.

As for the relationship between Schiller and Peirce, a few surviving letters from 1905 between them indicate that Peirce was easily able to grasp Schiller's understanding of pragmatism as it had developed to that date (and make a few critical comments thereupon). However, the reverse was not the case. Schiller appears to have at best acquired a superficial understanding of Peirce's formulation of pragmatism, and, as in the case of Dewey, Schiller incorporated very little of Peirce's thought. Once again, Schiller preferred to cultivate his own growing system off from the roots of pragmatism. It can be speculated that Schiller's work on key topics, especially the logic and methodology of science, would have been greatly enriched by careful study of Peirce's work.

IV

It must be recalled that each of the classical pragmatists, from Charles S. Peirce starting in the 1870s down to Dewey and Schiller in the 1930s, sought a way to protect and legitimize experimental scientific method and a robust naturalism from a mostly hostile philosophical environment. In this effort, Schiller was notorious for advocating several controversial philosophical theses that directly contradicted the prevailing doctrines of both rationalistic idealists and realists. Rejecting the notion of absolute truth as well as the correspondence theory of truth, Schiller sought proper recognition for the essential role that the active human mind plays in the creation of knowledge. Schiller believed that the human mind could aspire to no greater type of knowledge than scientific knowledge, unlike rationalists of that era who sought purer and higher truths with such methods as direct perception, introspection, or pure logic. He also held that the pursuit of scientific knowledge would always involve periodic intellectual revolutions, that can transform seemingly a priori principles into discredited and useless postulates.

Schiller was rare among philosophers for his recognition of the perpetual fallibility and revisability of all knowledge, including logic. By 1902, some fifty years before W.V. Quine and Thomas Kuhn, Schiller had designed elaborate arguments in his essay "Axioms as Postulates" against the analytic/synthetic dichotomy and the a priori/a posteriori dichotomy. Schiller regarded these distinctions as contextually relative to the current state of scientific knowledge at a particular time. For Schiller, the meanings of terms might seem fixed if gazed upon in isolation by intuition, but they are continually in flux as we use them in inferentially related propositions, so all propositions actually used in thought are synthetic. Furthermore, allegedly a priori propositions are nevertheless indirectly answerable to

future experience as science seeks further corroboration and undergoes theoretical revolutions. In later works on logic and science, Schiller developed his view that each theory contains axiomatic postulates whose life and meaning depends on the fate of that theory. Like Quine, Schiller viewed the modes of logical inference as tightly connected with scientific theories, and perceived how scientific progress has always required gradual modifications to logic.

Like Peirce and Karl Popper, Schiller identified the truth value of a scientific theory with its value for predicting future experience. Updating empiricism with the new experimental psychology, Schiller concluded that knowledge is not accumulated from what has been given in perception, but is instead actively constructed by selecting from experience what seems relevant and anticipating future experiences. Successful theories work best by being most capable of predicting future events, and thus Schiller declared that "true" theories are those which work. Rationalists such as Russell were appalled by this obviously fallibilistic sense of "true" and strenuously defended absolute unchanging truth. Schiller continually demanded from his critics a clear explanation of how such fixed truths could be known. Having scorned sense-data, introspection, intuition, pure logic, and the like, Schiller laid a trap for critics leading to a confession, which very few ever made, that their rationalistic conception of absolute truth is intellectually empty. Science must henceforth be the only legitimate form of intellectual inquiry, and philosophy must reform its notions of "theory," "knowledge," and "truth" accordingly.

During the reign of absolute idealism in England, science was widely considered as an inferior sort of knowledge. Absolute idealists worried that excessive admiration of science would lead to a destructive materialism hostile to the life of the mind and also to the immortal soul. The potential reconciliation of religion and science also animated Schiller's philosophy. Schiller agreed with idealists that crude reductive materialism should be avoided. Since science was evidently the intentional creation of minds seeking the prediction and control of the environment, it would be absurd to misuse the results of science to deny the full reality of the intentionality, creativity, and purposiveness of minds. The ontological and epistemological priority of the mind is captured by Schiller's preference for "humanism" and "personalism" as labels for his philosophy. "Man is the measure of all things" was Schiller's humanistic doctrine in brief, happily borrowed directly from Protagorus. For Schiller, empiricism and pragmatism are immediate corollaries to this emphasis on the powers of the intelligent human being.

Freed from the tight strictures of a universe conceived through any rationalistic methodology, underlying both materialistic determinism and abso-

lutist teleology, Schiller (like James) exulted in the "open universe" of genuine possibilities for personal evolution towards greater harmony within both the social world and the natural world. Reality remained a cooperative yet quasi-independent partner to human efforts. While natural processes cannot be identified apart from the results of human transformations of the world, since nature cannot be known before such transformations, reality surely imposes many constraints on our partially free enterprises.

For Schiller, reality should be pragmatically conceived as not yet complete, still in the process of growth, stimulated towards definite forms by human activity. Human creations are not merely rearrangements of preexisting raw materials. All our creations, including knowledge, transform reality into genuinely novel things, thereby creating truly new realities and adding to the amount of being. The dictum that matter (or energy, etc.) can neither be created nor destroyed is but a convenient fiction successfully imposed on the world for a circumscribed kind of scientific investigation, and cannot, like any such principle, be taken as reigning absolutely over all dealings with the universe. The best term for reality is the Aristotelian notion of *hulé*, signifying the indeterminate potentiality of objective nature which can be known only insofar as human interaction creatively establishes actuality. The subjective nature of knowledge's origins cannot plunge personal idealism into either solipsism or panpsychism, since knowledge is created in this wider human–environment matrix.

At the heart of this metaphysical vision is a post-Kantian empiricist epistemology, placing Schiller in the company of positivists such as Ernst Mach, Henri Poincaré and Rudolf Carnap, and pragmatic empiricists, especially John Dewey and C. I. Lewis. Schiller's version of pragmatism was announced in "Axioms as Postulates" and elaborated by several essays in *Humanism* (1903) and *Studies in Humanism* (1907). Pragmatic empiricism cannot endorse the psychological passivity of positive experience, and denies that inductive generalizations from atomic facts in turn structure further experience. The mind must impose its own principled ordering on experience in order for there to be any meaningful facts, leaving to induction only a limited efficacy for suggesting higher-order principles. Kantianism, while rescuing the normative character of principles from positivism's clutches, mistakenly elevates their necessary role to an a priori and universal status. If the mind is instead an actively biological process, its own habits control our behavioural habits, which in turn may track cooperating natural processes. To the degree that successful cooperation can be reliably established, our mental habits are "verified" as (fallibly) true. Both the correspondence theory of truth upheld by realists and the coherence theory of truth upheld by absolutists vainly try to legislate a priori the nature of truth, and both reap the inevitable sceptical consequences.

Psychological habits are both "axioms" and "postulates": they are regular, normative, social and transformable. Regularity implies stability without rigid fixity or universal dominion; as Schiller observes, laws of thought are not natural laws without exception since even a philosopher may contradict himself or herself. That he or she can recognize his or her error is made possible by the normative nature of mental laws. Most mental laws are socially normative in a double sense: the most general (e.g. that there is an external world, that this world displays uniformities) have their evolutionary roots in our common humanity, and many more have historical roots in the evolution of one's culture. To the extent that mental laws come under reflective scrutiny (in situations where their operations produce more failure than success) there arises an opportunity deliberatively to transform them. This opportunity grounds their status as "postulates" in the sense that we grasp their contingent status as dependent on continued human allegiance. In the first chapter of *Studies in Humanism* Schiller asserts that the meaning of a rule lies in its application; long before Wittgenstein's endorsement, many of the wider implications of this pragmatic approach to rules were explored in Schiller's writings.

The higher-order axioms of logical and mathematical science remain epistemologically necessary as structuring experience even while they are contingently sustained by the scientific community. Schiller argued that logical necessity is only psychological certainty produced by our conviction in the meaning of terms, and that valid syllogisms are just exercises in begging the question. Genuine learning requires altering the meanings of terms in response to novel experiences, as all scientific progress shows. Meaning cannot be either an inherent property of objects or a static relation between objects, but an activity or attitude taken up towards objects by a subject. To attribute meaning and to attribute value are practically the same thing. Understanding the contextual value, the situational practical relevance, of a statement is needed for grasping and applying its meaning. The theory of propositions, the life-blood of modern rationalisms, abstracts all psychological value from statements to create an illusion of transhuman truth.

In "Scientific Discovery and Logical Proof" (1917), "Hypothesis" (1921), and *Logic for Use* (1929) Schiller constructed a sophisticated philosophy of science grounded in a distinction between the logic of discovery and logic of verification, and a denial of the notion that facts can be ascertained independently of a guiding hypothesis. Schiller develops a theory of the theory–observation relation, his own version of abductive logic, and an explanation of how causal analysis is dependent on the inquirer's selection of relevant factors. While more on the nominalistic side with James, Schiller did agree with Peirce and Dewey that pragmatism cannot be cate-

gorized with positivistic empiricism or crude instrumentalism. Schiller's philosophy of science strenuously avoided phenomenalism.

No metaphysical truth can be attributed to any laws; whether reality is such that we should conceive it according to one or another mental law depends on the results of a posteriori experimental science. Science should embrace theoretical pluralism, since there can be no reasonable expectation that the science's separate bodies of postulates could ever be reduced to the principles or laws of any one of them. Metaphysics at best may suggest novel postulates attempting to harmonize scientific principles, but these too are subject to experimental confirmation. No absolute harmonization could be possible, and thus metaphysical pluralism is recommended, because complete agreement on metaphysics is obstructed by temperamental and valuational disparities across humanity. Science and metaphysics thus rest on ethics.

Pluralism also characterizes Schiller's moral theory and axiology, further developed in his last books. His definition of value as a personal attitude towards an object of interest forbids the reducing of value to anything else. Moral laws and religious doctrines represent long-tested useful beliefs, revisable in the face of new demands and problems. With James, Schiller found a finite evolving personal God congenial to moral progress towards cosmic harmony. With Bergson, Schiller conceived nature as the source of evil insofar as its processes resist God and evolution.

U

Schiller remained faithful to James and his pragmatism for the rest of his life. Schiller viewed himself as practically the sole legitimate heir to the center of James's philosophical vision. Ironically, while successfully preserving James's reputation and keeping James's ideas visible after his death in 1910, Schiller himself dropped from sight after his own death in 1937. Despite Schiller's strenuous efforts to uphold his promise to get pragmatism flourishing, he was unable to inspire a British pragmatism movement. Schiller was never able to ascend to a university philosophy chair, and was prevented from having much influence among advanced students.

Another consideration relevant to speculation about Schiller's failure to have more of a lasting impact on English philosophy is that he engaged in some related intellectual pursuits that seemed quite unphilosophical to the establishment. Schiller maintained a close interest in three concerns besides traditional issues of philosophy: psychical research, educational reform, and eugenics. He defended the legitimacy of scientifically investigating psychical phenomena while personally maintaining a sound skepti-

cism. He recommended university reforms away from the classics and pure logic towards science and applied subjects. In the area of eugenics, Schiller was also a vigorous advocate of a variety of eugenics "reforms." He was a founding member of the English Eugenics Society, served as its Vice President in 1909, and sat on its Council in 1910–11, 1916, and 1936. Although Schiller advocated state-sponsored programs of encouraging the "best" parents to have larger families, he rejected both racism and fascism, preferring a meritocracy to the alternatives of unrestrained democracy or rigid totalitarianism. All three of these pursuits were increasingly viewed with disfavor by English philosophers in the 1920s and 1930s.

No better illustration of Schiller's rise and fall can be found than by looking at Bertrand Russell's estimations in 1922, 1928, and then again in 1945. Despite their philosophical disagreements, Russell admired Schiller's wit and wrote a letter in support of his candidacy to an Oxford professorship in 1922, saying "He is, as is generally recognized, the leading representative of the philosophy known as Pragmatism or Humanism, and it would be difficult to apportion between him and William James their respective shares in the creation of this philosophy."[3] In his 1928 *Sceptical Essays*, Russell acknowledges Schiller as co-equal with William James and John Dewey: "The three founders of pragmatism differ greatly *inter se*; we may distinguish James, Schiller, and Dewey as respectively its religious, literary, and scientific protagonists."[4] However, by 1945 Russell decided that he could dismiss Schiller's significance for his text *A History of Western Philosophy*: "[besides James] there are two other protagonists of pragmatism, F. C. S. Schiller and John Dewey. I shall consider Dr. Dewey in the next chapter; Schiller was of less importance than the other two."[5] And that was the last substantial mention of Schiller by Russell, or by any major British philosopher since. If it were not for John Passmore's 1966 edition of his *A Hundred Years of Philosophy*, in which six pages deal with Schiller, one could rightly suppose that British philosophy had entirely forgotten about Schiller.

Despite recent neglect, the record shows that Schiller was among the most prominent British philosophers of his generation. A full comprehension of the nature of original philosophical activity in late Victorian and early twentieth century England requires an appreciative recognition of Schiller's work.

NOTES

1. I am indebted to Mark Porrovecchio for assistance with confirming these biographical facts, and for helpful suggestions throughout.

2. *The Correspondence of William James*, vol. 8: *1895–June 1899*, ed. John J.

McDermott, Ignas K. Skrupskelis, and Elizabeth M. Berkeley (Charlottesville: University Press of Virginia, 2000), p. 312.

3. *Application and Testimonials of Ferdinand Canning Scott Schiller. M.A., D.Sc., Fellow and Tutor of Corpus Christi College, for the Deputy Professorship of Moral Philosophy in the University of Oxford* (1926), copy located with the Ferdinand Canning Scott Schiller Papers, box 3, Department of Special Collections, University Research Library, University of California, Los Angeles.

4. Bertrand Russell, *Sceptical Essays* (New York: W. W. Norton, 1928), p. 61.

5. Russell, *A History of Western Philosophy* (New York: Simon and Schuster, 1945), p. 816.

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Part One

FIRST PRINCIPLES

Humanism, Personalism, Pluralism, Pragmatism

INTRODUCTION TO PART ONE

Hugh McDonald

Schiller's form of pragmatism was recognized as unique from the beginning. Peirce believed that Schiller had worked out his own position, between that of James and himself. However, Schiller had a somewhat detached view of pragmatism, and preferred, like Dewey, to distinguish his position from the mainline of pragmatism. Schiller incorporated pragmatism as a theory of truth with a special application to epistemological issues into his more idealistic philosophy of Humanism. Schiller refers to this as "ethical" Humanism. Thus ethics is the highest aspiration of humans, who by making reality have, as Peirce noted, a part in the creation.

Humanism consists in a threefold reform: a reform of ethics, of logic and of first philosophy as an Ethical Humanism. The reform of ethics is a reform of first philosophy and the relation of fields of philosophy, anticipating Levinas' similar project by over fifty years (see part two). Schiller would say that the values that form the basis of philosophy have a humanistic basis; it is human values, not natural or supernatural values, which are the basis for philosophy. His "ethical idealism" is a teleological first philosophy in which reality is subject to human good. Values have a humanistic sanction, not a divine one. Schiller pays tribute to the wide variety of human valuations—moral, economic, scientific, even religious—by putting them at the center of his philosophy. His philosophy involves the recogni-

tion that the good, the true and even the real are not pre-existent entities waiting for us to trip over them, but the result of human effort and thought. "It is the *true for us*, the true *for us as practical beings*, just as the good is the good for us."[1] Schiller evaluates his own philosophy as a "more hopeful and humaner view of metaphysics . . ." It is more hopeful as being anti-fatalistic, melioristic, and viewing man in a heroic way. Humanism "is content to take human value as the clue to the world of human experience, content to take Man on his own merits."

> It is only with beings that aim at ends, conceive *goods* and frame ideals of better living, that there begins that funding of the power over life which renders possible the pursuit, not of mere life, but of *good life*, and transfigures the struggle for existence by the ethical ideal.[2]

A practical result of Schiller's philosophy is to harmonize the experiences of man by attenuating the distinction of fact and value, "pure" and practical, natural and man-made. "[Humanism] demands that man's integral nature shall be used as the whole premise which philosophy must argue from wholeheartedly, that man's complete satisfaction shall be the conclusion that philosophy must aim at, that philosophy shall not cut itself loose from the real problems of life by making initial abstractions which are false. . . ."[3] Knowledge and logic are for human use.

While humanism is taken to mean Schiller's whole philosophy in the middle period (1900–1920), and a "final theory of life,"[4] there is a seeming change in the late period. Concerned to distinguish his own views from what he called "religious humanism," presumably supernatural in orientation, he narrows the description of his own form. In the late work *Must Philosophers Disagree*, he distinguishes "religious humanism" from humanism in the "epistemological sense." Humanism in Schiller's sense recognizes "the central position of man . . . in the theory of knowledge."[5] He also denied that humanism has any direct bearing on religion, although he did not reject the idea of God; or that it is a metaphysic. This late view involves a reduction from the earlier view.

The earlier and later views are connected by a focus on the human agent as the condition of all knowledge. Schiller critically evaluates the standard of pure "objectivity," which he regards as involving a false dichotomy with subjectivity. Science serves human purposes and these purposes cannot be ignored in a full account of science.[6] The attempt by intellectualists and others to eliminate the human aspects of knowing is artificial. Moreover, knowledge involves an active pursuit and making "demands" upon nature through experimentation. Even concepts used to explain natural phenomena do not arise simply from experience. Rather,

they are "suggested" by actively inquiring minds as postulates, rooted in the demands of the human inquirers. Thus "our whole purposive nature" may generate conceptions as demands.[7] Although they may have a subjective origin, they can acquire the status of laws. Humanistic voluntarism, then, recognizes that knowledge is the result of interaction of the knower with the world, and is a joint product of humans working together. Schiller contrasts "humanist voluntarism" with narrow intellectualism, which only considers one side of human nature. However, like other idealists, he believes that knowledge is mediated by mind—that mind is essential to knowledge. What he adds is that the mind is larger than the intellect and that there are other human factors essential to knowledge, including desire, and will, the source of human purposes.

In terms of biology, Schiller viewed humans as the "culmination" of the process of evolutionary development from life to consciousness, to which their bigger brains are testimony. This biological outlook was to slowly replace the more idealistic view of his early period, in which his middle period may be viewed as a transition. While in the early and middle periods humanism is sharply separated from naturalistic philosophy, Schiller's later views reveal a steady erosion of his anti-naturalism. Although he never explicitly abandoned humanism in his late period, and still considered himself as a humanist,[8] there is an interesting passage in the essay "Man's Future on Earth." In it he states that one goal of state planning should be "a selection of what is judged to be the *best* in order to grow a *superman*." Schiller's evolutionary and eugenical views seem here to have superceded his humanism, perhaps under the influence of Nietzsche and George Bernard Shaw. The evolution beyond humans to a superhuman means that the humanist perspective will ultimately be superceded. The perfecting of humans, the eugenical project, has its own elimination as an ultimate goal. Yet it is not clear from this passage whether he views the superman as a human with superlative endowments or, like Nietzsche, as the next step in evolution beyond humans.

Human nature is complex. Like the other pragmatists, Schiller acknowledged the truth of evolution, that humans evolved from primate ancestors; humanism does not mean a non-natural origin. However, like Peirce, he did not accept the naturalistic view that the lower could explain the higher.[9] While human nature was originally biological, naturalistic processes alone cannot explain later developments in human history. Human nature has risen above mere nature. The rise of consciousness is a development distinct from the rise of life and its "culmination." Thus there are multiple layers or plural elements in human nature including chemical and organic processes, subconscious and conscious thought, and the active pursuit of ideals. There is also the possibility of design in the universe, that

is, that there is a finite personal God working behind evolution and responsible for the rise of humans.

Schiller associated with the figures in the personalist movement in philosophy from its inception, and he noted his "favorable" evaluation of the "personal idealism" of McTaggart and others. He contrasted this personal idealism favorably with the absolute idealism of Bradley and Bosanquet. He also published numerous articles in the *Personalist*, a now defunct journal. Schiller argued in *Humanism* (1903) that all philosophical systems are "a unique and personal achievement." Philosophy is the personal statement of the individual thinker, and thus its diversity should not be a source of despair, but of wonder. This perspective was held to the end; in one of his last works he also argues that thought always issues from the personality of some thinker, and that "all truth seeking is personal." Indeed, Schiller tied humanism to personalism throughout his writings. "We may define Humanism as the systematic and methodical working out of the perception that every thought is a personal act of which some thinker is the author and for which he may be held responsible."[10]

Schiller's personalist views were so tightly interconnected with his humanism that it is difficult to separate them. Humanism is personalist, since it is the man of "flesh and blood," the individual person who thinks, experiences, acts and lives. These views, as Abel has noted, connect Schiller to Existentialist forms of humanism. They were perhaps also the basis for the accusations of "subjectivism" leveled against Schiller by, among others, some figures in the "Chicago" school of pragmatism. However, while personal experience of living humans is central to his philosophy, Schiller was no Cartesian and attempted, like the other pragmatists, to advance beyond the Cartesian categories of subject and object. His personalism recognizes the individual and idiosyncratic quality of thought, but also that its value lies in its consequences, both for oneself and others, the larger community.

Schiller's arguments for personalism entailed a critique of the abstract model of human psychology developed both by Absolute idealists and naturalistic psychologists. He criticized both the "substance" view of the soul in Descartes and the view of mind as merely the "product of sensations." Neither of these, he thought, could account for the personal aspect of experience. Indeed, he argued for the irreducibly private element of experience that could not be encompassed by any view of "universal mind," and against any view of consciousness in general except as an abstraction. People's minds are private and cannot be part of some all-inclusive absolute. Judging is a personal process, relative to a situation. Thought and logic depend on personal experience. However, he did believe in conscious persons and personal experience. His view was that the mind is active and thus any assimilation of the methods of psychology to that of physics, that is,

representing introspection as contemplation, "rather than as the reflective return of an active being . . ."[11] would be a mistake. A person included, among pluralistic capacities, a mind, with feelings, desires, volitions and the capacity to reason. Schiller also recognized the subconscious, at that time a new idea in psychology, and the possibility of multiple personalities.

Ultimately it is humans who stand at the center of Schiller's philosophy. But it is not humans as a detached mental entity, a doubting subject or ego, as in Descartes, and his empiricist counterparts. It is not the existential human authentically confronting an absurd universe, as in Sartre, who rejected, along with the "philosophical anthropology" movement, any attempt to characterize humans based on ethics. It is neither the human of supernatural creation, nor the human who is a total product of natural determination, as in naturalism. Nor is human life like a machine, as in LaMettrie and behaviorism. Although all these models are elements of human nature, for Schiller humans stand in the world of concrete practice with needs and values.

Notes

1. "'Useless' Knowledge," *Humanism*, p. 30.
2. "Darwinism and Design," this volume, p. 275
3. "The Definition of Pragmatism and Humanism," this volume, p. 53.
4. "Preface," this volume, p. 38.
5. "Pragmatism, Humanism, and Religion," this volume, p. 322.
6. "Why Humanism?" this volume, p. 97.
7. Ibid., p. 96.
8. "Pragmatism, Humanism, and Religion," this volume, p. 312.
9. "Axioms as Postulates," this volume, p. 457.
10. "Pragmatism, Humanism, and Religion," this volume pp. 313–14.
11. "The Meaning of 'Self,'" this volume, p. 86.

1

PREFACE

I

The appearance of this volume demands more than the usual amount of apology. For the philosophic public, which makes up for the scantiness of its numbers by the severity of its criticism, might justly have expected me to follow up the apparently novel and disputable position I had taken up in my contribution to *Personal Idealism* with a systematic treatise on the logic of 'Pragmatism'. And no doubt if it had rested with me to transform wishes into thoughts and thoughts into deeds without restrictions of time and space, I should willingly have expanded my sketch in *Axioms as Postulates* into a full account of the beneficent simplification of the whole theory of knowledge which must needs result from the adoption of the principles I had ventured to enunciate. But the work of a college tutor lends itself more easily to the conception than to the composition of a systematic treatise, and so for the present the philosophic public will have to wait.

The general public, on the other hand, it seemed more feasible to please by an altogether smaller and more practicable undertaking, viz., by repub-

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Humanism: Philosophical Essays (London and New York: Macmillan, 1903), pp. vii–xxv.

lishing from various technical journals, where conceivably the philosophic public had already read them, the essays which compose the bulk of this volume. I have, however, taken the opportunity to add several new essays, partly because they happened to be available, partly because they seemed to be needed to complete the doctrine of the rest. And the old material also has been thoroughly revised and considerably augmented. So that I am not without hopes that the collection, though discontinuous in form, will be found to be coherent in substance, and to present successive aspects of a fairly systematic body of doctrine. To me at least it has seemed that, when thus taken collectively, these essays not only reinforced my previous contentions, but even supplied the ground for a further advance of the greatest importance.

It is clear to all who have kept in touch with the pulse of thought that we are on the brink of great events in those intellectual altitudes which a time-honoured satire has described as the *intelligible* world. The ancient shibboleths encounter open yawns and unconcealed derision. The rattling of dry bones no longer fascinates respect nor plunges a self-suggested horde of fakirs in hypnotic stupor. The agnostic maunderings of impotent despair are flung aside with a contemptuous smile by the young, the strong, the virile. And there is growing up a reasonable faith that even the highest peaks of speculation may prove accessible to properly-equipped explorers, while what seemed so unapproachable was nothing but a cloudland of confused imaginings. Among the more marked symptoms that the times are growing more propitious to new philosophic enterprise, I would instance the conspicuous success of Mr. Balfour's *Foundations of Belief*; the magnificent series of William James's popular works, *The Will to Believe*, *Human Immortality*, and *The Varieties of Religious Experience*; James Ward's important Gifford Lectures on *Naturalism and Agnosticism*; the emergence from Oxford, where the idealist enthusiasm of thirty years ago long seemed to have fossilised into sterile logic-chopping or to have dissolved into Bradleian scepticism, of so audacious a manifesto *Personal Idealism*; and most recently, but not least full of future promise, the work of the energetic Chicago School headed by Professor Dewey.[1] It seemed therefore not impolitic, and even imperative, to keep up the agitation for a more hopeful and *humaner* view of metaphysics, and at the same time to herald the coming of what will doubtless be an epochmaking work, viz., Williams James's promised *Metaphysics*.

II

The origin of great truths, as of great men, is usually obscure, and by the time that the world has become cognizant of them and interested in their

pedigree, they have usually grown old. It is not surprising therefore that the central thought of our present Pragmatism, to wit the purposiveness of our thought and the teleological character of its methods, should have been clearly stated by Professor James so long ago as 1879.[2] Similarly I was surprised to find that I had all along been a pragmatist myself without knowing it, and that little but the name was lacking to my own advocacy of an essentially cognate position in 1892.[3]

But Pragmatism is no longer unobserved; it has by this time reached the 'Strike, but hear me!' stage, and as the misconceptions due to sheer unfamiliarity are refuted or abandoned it will rapidly enter on the era of profitable employment. It was this latter probability which formed one of my chief motives for publishing these essays. The practical advantages of the pragmatist method are so signal, the field to be covered is so immense, and the reforms to be effected are so sweeping, that I would fain hasten the acceptance of so salutary a philosophy, even at the risk of prematurely flinging these informal essays, as forlorn hopes, against the strongholds of inveterate prejudice. It is in the hope therefore that I may encourage others to cooperate and to cultivate a soil which promises such rich returns of novel truth, that I will indicate a number of important problems which seem to me urgently to demand treatment by pragmatic methods.

I will put first *the reform of Logic*. Logic hitherto has attempted to be a pseudo-science of a non-existent and impossible process called *pure thought*. Or at last we have been ordered in its name to expunge from our thinking every trace of feeling, interest, desire, and emotion, as the most pernicious sources of error.

It has not been thought worthy of consideration that these influences are the sources equally of all truth and all-pervasive in our thinking. The result has been that logic has been rendered nothing but a systematic misrepresentation of our actual thinking. It has been made abstract and wantonly difficult, an inexhaustible sources of mental bewilderment, but impotent to train the mind, by being assiduously kept apart from the psychology of concrete thinking. And yet a reverent study of the actual procedures of the mind might have been a most precious aid to the self-knowledge of the intellect. To justify in full detail these grave strictures (from which a few only of modern logicians, notably Professors Sigwart and Wundt, and Mr. Alfred Sidgwick,[4] can be more or less exempted) would be a long and arduous undertaking. Fortunately, however, a single illustration will sufficiently indicate the sort of difference Pragmatism would introduce into the traditional maltreatment.

Let us consider a couple of actual, and probably familiar, modes of reasoning. (1) *The world is so bad that there must be a better*; (2) *the world is so bad that there cannot be a better*. It will probably be admitted that both of

these are common forms of argumentation, and that neither is devoid of logical force, even though in neither case does it reach 'demonstration'. And yet the two reasonings flatly contradict each other. Now my suggestion is that this contradiction is not verbal, but deep-rooted in the conflicting versions of the nature of thought which they severally exemplify. The second argument alone it would seem could claim to be strictly 'logical'. For it alone conforms to the canons of the logical tradition which conceives reasoning as the product of a 'pure' thought untainted by volition. And as in our theoretical reflections we can all disregard the psychological conditions of actual thinking to the extent of selecting examples in which we are interested merely as examples, we can appreciate its abstract cogency. In arguing from a known to an unknown part of the universe, it is 'logical' to be guided by the indications given by the former. If the known is a 'fair sample' of the whole, how can the conclusion be otherwise than sound? At all events how can the given nature of the known form a logical ground for inferring in the unknown a complete reversal of its characteristics?

And yet this is precisely what the first argument called for. Must not this be called the illogical caprice of an irrational desire? By no means. It is the intervention of an emotional postulate which takes the first step in the acquisition of new knowledge. But for its beneficent activity we should have acquiesced in our ignorance. But once an unknown transfiguration of the actual is *desired*, it can be *sought*, and so, in many cases, *found*. The passionless concatenations of a 'pure' thought never could have reached, and still less have justified, our conclusion: to attain it our thought needs to be impelled and guided by the promptings of volition and desire.

Now that such ways of reasoning are not infrequent and not unsuccessful, will, I fancy, hardly be denied. Indeed if matters were looked into it might easily turn out that reasonings of the second type *never* really occur in actual knowing, and that when they seem to do so, we have only failed to detect the hidden interest which incites the reason to pretend to be 'dispassionate'. In the example chosen, e.g., it may have been a pessimist's despair that clothed itself in the habiliments of logic, or it may have been merely stupidity and apathy, a want of imagination and enterprise in questioning nature. But, it may be said, the question of the justification *de jure* of what is done *de facto* still remains. The votary of an abstract logic may indignantly exclaim—'Shall I lower my ideal of pure thought because there is little or no pure thinking? Shall I abandon *Truth*, immutable, eternal, sacred Truth, as unattainable, and sanction as her substitute a spurious concretion of practical experience, on the degrading plea that it is what we need to live by, and all we need to live by? Shall I, in other words, abase myself? No! Perish the thought! Perish the phenomenal embodiment of Pure Reason out of Time and Place (which I popularly term "myself")

rather than that the least abatement should be made from the rigorous requirements of my theory of Thought!'

Strong emotional prejudices are always hard to reason with, especially when, as here, their nature is so far misconceived that they are regarded as the revelations of Pure Reason. Still, in some cases, the desire for knowledge may prove stronger than the attachment to habitual modes of thought, and so it may not be wholly fruitless to point out (1) that our objections are in no wise disposed of by vague charges of a 'confusion of psychology and logic'; (2) that the canons of right Thought must, even from the most narrowly logical of standpoints, be brought into some relation to the procedures of actual thinking; (3) that in point of fact the former are derived from the latter; (4) that if so, our first mode of reasoning must receive logical recognition, because (5) it is not only usual, but useful in the discovery of 'Truth'; (6) that a process which yields valuable results must in some sense be valid, and (7) that, conversely, an ideal of validity which is not realisable is not valid. In short, how can a logic which professes to be the theory of thought set aside as irrelevant a normal feature of our thinking? And if it cannot, is it not evident that, when reformed by Pragmatism, it must assume a very different complexion, more natural and clearer, than while its movements were impeded by the conventions of a strait-laced Intellectualism?

Secondly, Pragmatism would find an almost inexhaustible field of exploration in the sciences, by examining the multifarious ways in which their 'truths' have come to be established, and showing how the practical value of scientific conceptions has accelerated and determined their acceptance. And it is not over-sanguine to suppose that a clearer consciousness of the actual procedure of the sciences would also lead to the critical rejection of conceptions which are not needed, and are not useful, and would facilitate the formation of new conceptions which are needed.[5]

In the field of Ethics Pragmatism naturally demands to know what is the actual use of the ethical 'principles' which are handed on from one text-book to another. But it speedily discovers that no answer is forthcoming. Next to nothing is known about the actual efficacy of ethical principles: Ethics is a dead tradition which has very little relation to the actual facts of moral sentiment. And the reason obviously is that there has not been a sufficient desire to know to lead to the proper researches into the actual psychological nature and distribution of the moral sentiments. Hence there is implicit in Pragmatism a demand for an inquiry to ascertain the actual facts, and pending this inquiry, for a truce to the sterile polemic about ethical principles. In the end this seems not unlikely to result in a real revival of Ethics.

If finally we turn to a region which the vested interests of time-honoured organisations, the turbid complications of emotion, and a for-

malism that too often merges in hypocrisy, must always render hard of access to a sincere philosophy, and consider the attitude of Pragmatism towards the religious side of life, we shall find once more that it has a most important bearing. For *in principle* Pragmatism overcomes the old antithesis of Faith and Reason. It shows on the one hand that 'Faith' must underlie all 'Reason' and pervade it, nay, that at bottom rationality itself is the supremest postulate of Faith. Without Faith, therefore, there can be no Reason, and initially the demands of 'Faith' must be as legitimate and essentially as reasonable as those of the 'Reason' they pervade. On the other hand, it enables us to draw the line between a genuine and a spurious 'Faith'. The spurious 'faith', which too often is all theologians take courage to aspire to, is merely the smoothing over of an unfaced scepticism, or at best a pallid fungus that, lurking in the dark corners of the mind, must shun the light of truth and warmth of action. In contrast with it a genuine faith is an ingredient in the growth of knowledge. It is ever realising itself in the knowledge that it needs and seeks—to help it on to further conquests. It aims at its natural completion in what we significantly call the *making true* or *verification*, and in default of this must be suspected as mere make-believe. And so the identity of method in Science and Religion is far more fundamental than their difference. Both rest on experience and aim at its interpretation: both proceed by postulation; and both require their anticipations to be verified. The difference lies only in the mode and extent of their verifications: the former must doubtless differ according to the nature of the subject; the latter has gone much further in the case of Science, perhaps merely because there has been so much less persistence in attempts at the systematic verification of religious postulates.

III

It is clear, therefore, that Pragmatism is able to propound an extensive programme of problems to be worked out by its methods. But even Pragmatism is not the final term of philosophic innovation: there is yet a greater and more sovereign principle now entering the lists of which it can only claim to have been the fore-runner and vicegerent. This principle also has long been working in the minds of men, dumb, unnamed and unavowed. But the time seems ripe now formally to name it, and to let it loose in order that it may receive its baptism of fire.

I propose, accordingly, to convert to the use of philosophic terminology a word which has long been famed in history and literature, and to denominate HUMANISM the attitude of thought which I know to be habitual in William James and in myself, which seems to be sporadic and

inchoate in many others, and which is destined, I believe, to win the widest popularity. There would indeed be no flavour of extravagance and paradox about this last suggestion, were it not that the professional study of Philosophy has so largely fallen into the hands of recluses who have lost all interest in the practical concerns of humanity, and have rendered philosophy like unto themselves, abstruse, arid, abstract and abhorrent. But in itself there is no reason why this should be the character of philosophy. The final theory of life ought to be every man's concern, and if we can dispel the notion that the tiresome technicalities of philosophy lead to nothing of the least practical interest, it yet may be. There is ground, then, for the hope that the study of a *humaner* philosophy may prove at least as profitable and enjoyable as that of the 'humaner' letters.

In all but name *Humanism* has long been in existence. Years ago I described one of its most precious texts, William James's *Will to Believe*,[6] as a "declaration of the independence of the concrete whole of man with all his passions and emotions unexpurgated, directed against the cramping rules and regulations by which the Brahmins of the academic caste are tempted to impede the free expansion of human life," and as "a most salutary doctrine to preach to a biped oppressed by man '-ologies', like modern man, and calculated to allay his growing doubts whether he has a responsible personality and a soul and conscience of his own, and is not a mere phantasmagoria of abstractions, a transient complex of shadowy formulas that Science calls 'the laws of nature'." Its great lesson was, I held, that "there are not really any eternal and non-human truths to prohibit us from adopting the beliefs we need to live by, nor any infallible a priori tests of truth to screen us from the consequences of our choice." Similarly Professor James, in reviewing *Personal Idealism*,[7] pointed out that "a re-anthropomorphised universe is the general outcome of its philosophy." Only for *re-anthropomorphised* we should henceforth read *re-humanised*. 'Anthropomorphism' is a term of disparagement whose dyslogistic usage it may prove difficult to alter.[8] Moreover, it is clumsy, and can hardly be extended so as to cover what I mean by Humanism. There is no need to disclaim the truth of which it is the adumbration, and a non-anthropomorphic thought is sheer absurdity; but still what we need is something wider and more vivid.

Similarly I would not disclaim affinities with the great saying of Protagoras, that *Man is the Measure of all things*. Fairly interpreted, this is the truest and most important thing that any thinker ever has propounded. It is only in travesties such as it suited Plato's dialectic purpose to circulate that it can be said to tend to scepticism; in reality it urges Science to discover how Man may measure, and by what devices make concordant his measures with those of his fellow-men. Humanism therefore need not cast about for any sounder or more convenient starting-point.

For in every philosophy we must take some things for granted. Humanism, like Common Sense, of which it may fairly claim to be the philosophic working out, takes Man for granted as he stands, and the world of man's experience as it has come to seem to him. This is the only natural starting-point, from which we can proceed in every direction, and to which we must return, enriched and with enhanced powers over our experience, from all the journeyings of Science. Of course this frank, though *not* therefore 'uncritical', acceptance of our immediate experience and experienced self will seem a great deal to be granted by those addicted to abstruser methods. They have dreamt for ages of a priori philosophies 'without presuppositions or assumptions', whereby Being might be conjured out of Nothing and the sage might penetrate the secret of creative power. But no obscurity of verbiage has in the end succeeded in concealing the utter failure of such preposterous attempts. The a priori philosophies have all been found out.

And what is worse, have they not all been detected in doing what they pretended to disclaim? Do they not all take surreptitiously for granted the human nature they pride themselves on disavowing? Are they not trying to solve human problems with human faculties? It is true that in form they claim to transcend our nature, or to raise it to the superhuman. But while they profess to exalt human nature, they are really mutilating it—all for the kingdom of Abstraction's sake! For what are their professed starting-points,—Pure Being, the Idea, the Absolute, the Universal I, but pitiable abstractions from experience, mutilated shreds of human nature, whose real value for the understanding of life is easily outweighed by the living experience of an honest man?

All these theories then *de facto* start from the immediate facts of our experience. Only they are ashamed of it, and assume without inquiry that it is worthless as a principle of explanation, and that no thinker worthy of the name can tolerate the thought of expressly setting out from anything so vulgar. Thus, so far from assuming *less* than the humanist, these speculations really must assume a great deal *more*. They must assume, in addition to ordinary human nature, their own metempirical starting-points and the correctness (always more than dubious) of the deductions whereby they have *de facto* reached them.

'Do you propose then to accept as sacrosanct the gross unanalysed conceptions of crude Common Sense, and to exempt them from all criticism?' No, I only proposed to *start* with them, and to try and see whether we could not get as far with them as with any other, nay, *as far as we may want to get*. I have faith that the process of experience that has brought us to our present stand-point has not been wholly error and delusion, and may on the whole be trusted. And I am quite sure that, right or wrong, we have no

other, and that it is e.g. grotesque extravagance to imagine that we can put ourselves at the standpoint of the Absolute. I would protest, therefore, against every form of 'a priori metaphysical criticism' that condemns the results of our experience up to date as an illusory 'appearance' *without trial*. For I hold that the only valid criticism they can receive must come in, and through, their actual *use*. It is just where and in so far as common-sense assumptions fail to work that we are theoretically justified, and practically compelled, to modify them. But in each such case sufficient reasons must be shown; it is not enough merely to show that other assumptions can be made, and couched in technical language, and that our data are abstractly capable of different arrangements. There are, I am aware, infinite possibilities of conceptual rearrangement, but their discovery and construction is but a sort of intellectual game, and has no real importance.

In point of method, therefore, Humanism is fully able to vindicate itself, and so we can now define it as the philosophic attitude which, without wasting thought upon attempts to construct experience a priori, is content to take human experience as the clue to the world of human experience, content to take Man on his own merits, just as he is to start with, without insisting that he must first be disembowelled of his interests and have his individuality evaporated and translated into technical jargon, before he can be deemed deserving of scientific notice. To remember that Man is the measure of all things, i.e. of his whole experience-world, and that if our standard measure be proved false all our measurements are vitiated; to remember that Man is the maker of the sciences which subserve his human purposes; to remember that an ultimate philosophy which analyses us away is thereby merely exhibiting its failure to achieve its purpose, that, and more that might be stated to the same effect, is the real root of Humanism, whence all its auxiliary doctrines spring.

It is a natural consequence, for instance, that, if the facts require it, "real possibilities, real indeterminations, real beginnings, real ends, real evil, real crises, catastrophes and escapes, a real God and a real moral life, just as common sense conceives these things, may remain in *humanism* as conceptions which philosophy gives up the attempt either to 'overcome' or to reinterpret."[9] And whether or not Humanism will have to recognise the ultimate reality of all the gloomier possibilities of James's enumeration, it may safely be predicted that its '*radical empiricism*' will grant to the possibilities of '*pluralism*' a more careful and unbiassed inquiry than monistic preconceptions have as yet deigned to bestow upon them. For seeing that man is a social being it is natural that Humanism should be sympathetic to the view that the universe is ultimately 'a joint-stock affair'. And again, it will receive with appropriate suspicion all attempts to explain away the human personality which is the formal and efficient and final cause of all explana-

tion, and will rather *welcome* it in its unmutilated, undistorted immediacy as (though in an uncongenial tongue) the 'a priori condition of all knowledge'. And so it will approve of that '*personal idealism*' which strives to redeem the spiritual values an idealistic absolutism has so treacherously sold into the bondage of naturalism.

With 'Common Sense' it will ever keep in touch by dint of refusing to value or validate the products of merely speculative analyses, void of purpose and of use, which betoken merely a power to play with verbal phrases. Thus Humanism will derive, combine and include all the doctrines which may be treated as anticipations of its attitude.

For Pragmatism itself is in the same case with Personal Idealism, Radical Empiricism and Pluralism. It is in reality only the application of Humanism to the theory of knowledge. If the entire man, if human nature as a whole, be the clue to the theory of all experience, then human purposiveness must irrigate the arid soil of logic. The facts of our thinking, freed from intellectualistic perversions, will clearly show that we are not dealing with abstract concatenations of purely intellectual processes, but with the rational aims of thinkers. Great therefore, as will be the value we must claim for Pragmatism as a method, we must yet concede that man is greater than any method he has made, and that our Humanism must interpret it.

IV

It is a well-known fact that things are not only known by their affinities but also by their opposites. And the fitness of the term Humanism for our philosophic purpose could hardly better be displayed than by the ready transfer of its old associations to a novel context.

A *humanist* philosopher is sure to be keenly interested in the rich variety of human thought and sentiment, and unwilling to ignore the actual facts for the sake of bolstering up the narrow abstractions of some a priori theory of what 'all men must' think and feel under penalty of scientific probation. The humanist, accordingly, will tend to grow *humane*, and tolerant of the divergences of attitude which must inevitably spring from the divergent idiosyncrasies of men. *Humanism*, therefore, will still remain opposed to *Barbarism*. But Barbarism may show itself in philosophy in a double guise, as barbarism of temper and as barbarism of style. Both are human defects which to this day remain too common among philosophers. The former displays itself in the inveterate tendency to sectarianism and intolerance, in spite of the discredit which the history of philosophy heaps upon it. For what could be more ludicrous than to keep up the pretence that all must own the sway of some absolute and unquestionable

creed? Does not every page of every philosophic history teem with illustrations that a philosophic system is an unique and personal achievement of which not even the servilest discipleship can transfuse the full flavour into another's soul? Why should we therefore blind ourselves to the invincible individuality of philosophy, and deny each other the precious right to behold reality each at the peculiar angle whence he sees it? Why, when others cannot and will not see as we do, should we lose our temper and the faith that the heavenly harmony can only be achieved by a multitudinous symphony in which each of the myriad centres of experience sounds its own concordant note?

As for barbarism of style, that too is ever rampant, even though it no longer reaches the colossal heights attained by Kant and Hegel. If Humanism can restore against such forces the lucid writing of the older English style, it will make Philosophy once more a subject gentlemen can read with pleasure. And it can at least contend that most of the technicalities which disfigure philosophic writings are totally unneeded, and that the stringing together of abstractions is both barbarous and dangerous. Pedagogically it is barbarous, because it nauseates the student, and because abstract ideas need to be illumined by concrete illustrations to fix them in mind: logically it is dangerous, because abstractions mostly take the form of worn-out metaphors which are like sunken rocks in navigation, so that there is no more fatal cause of error and deception than the trust in abstract dicta which by themselves mean nothing, and whose real meaning lies in the applications, which are not supplied.

In history, however, the great antithesis has been between Humanism and Scholasticism. This also we may easily adopt, without detracting from its force. For Scholasticism is one of the great facts in human nature, and a fundamental weakness of the learned world. Now, as ever, it is a spirit of sterilising pedantry that avoids beauty, dreads clearness and detests life and grace, a spirit that grovels in muddy technicality, buries itself in the futile burrowings of valueless researches, and conceals itself from human insight by the dust-clouds of desiccated rubbish which it raises. Unfortunately the scholastic temper is one which their mode of life induces in professors as easily as indigestion, and frequently it renders them the worst enemies of their subjects. This is deplorable but might be counteracted, were it not thought essential to a reputation for scientific profundity at least to *seem* scholastic. Humanism therefore has before it an arduous fight with the Dragon of Scholasticism, which, as it were, deters men from approaching the golden apples that cluster on the tree of knowledge in the garden of the Hesperides.

And lastly, may we not emphasise that the old associations of the world would still connect with Humanism a *Renascence* of Philosophy?

And shall we not accept this reminiscence as an omen for the future? For it is clear, assuredly, that Philosophy has still to be born again to enter on her kingdom, and that her votaries must still be born again to purge their systems of the taint of an inveterate barbarism. But some of these suggestions verge, perhaps, upon the fanciful: it suffices to have shown that Humanism makes a good name for the views I seek to label thus, and that in such extension of its meaning its old associations lose no force but rather gain a subtler flavour.

To claim that in its philosophic use Humanism may retain its old associations is not, however, to deny that it must enter also into new relations. It would be vain, for instance, to attempt concealment of the fact that to Naturalism and Absolutism its antagonism is intrinsic. Naturalism is valid enough and useful as a method of tracing the connexions that permeate reality from the lowest to the highest level: but when taken as the last word of philosophy it subjects the human to arbitrament of its inferior. Absolutism, on the other hand, cherishes ambitions to attain the superhuman; but, rather than admit its failure, it deliberately prefers to delude itself with shadows, and to reduce concrete reality to the illusory adumbration of a phantom Whole. The difference thus is this, that whereas Naturalism is worthy of respect for the honest work it does, and has a real use as a partial method in subordination to the whole, Absolutism has no use, and its explanatory value is nothing but illusion. As compared with these, Humanism will pursue the middle path; it will neither reject ideals because they are not realised, not yet despise the actual because it can conceive ideals. It will not think the worst of Nature, but neither will it trust an Absolute beyond its ken.

I am well aware that the ideas of which the preceding pages may have suggested the barest outline are capable of endless working out and illustration. And though I believe myself to have made no assertion that could not be fully vindicated if assailed, I realise most keenly that a complete statement of the Humanist position far transcends, not only my own powers, but those of any single man. But I hoped that those who were disposed to sympathy and open-mindedness would pardon the defects and overlook the gaps in this informal survey of a glorious prospect, while to those who are too imperviously encased in habit or in sloth, or too deeply severed from me by an alien idiosyncrasy, I knew that I could never hope to bring conviction, however *much*, nor to avoid offence, however *little*, I might try to say. And so I thought the good ship *Humanism* might sail on its adventurous quest for the Islands of the Blest with the lighter freight of these essays as safely and hopefully as with the heaviest cargo.

NOTES

1. They have published a number of articles in the *Decennial Publications* of the University; their *Studies in Logical Theory* are announced, but have not yet reached me. Though proceeding from a different camp, the works of Dr. J. E. McTaggart and Prof. G. H. Howison should also be alluded to as adding to the salutary ferment. For while ostensibly (and indeed ostentatiously) employing the methods of the old a priori dogmatism they have managed to reverse its chief conclusions, in a charming but somewhat perplexing way. I have on purpose confined this enumeration to the English-speaking world; but in France and even in Germany somewhat similar movements are becoming visible.

2. In his 'Sentiment of Rationality' in *Mind*, O.S. No. 15.

3. In *Reality and 'Idealism'*. Cp. pp. 119-121.

4. Whose writings, by reason perhaps of the ease of their style, have not received from the experts the attention they deserve.

5. Most opportunely for my argument the kind of transformation of our scientific ideas which Pragmatism will involve has received the most copious and admirable illustration in Professor Ostwald's great *Naturphilosophie*. Professor Ostwald is not a professional philosopher at all, but a chemist, and has very likely never heard of Pragmatism; but he sets forth the pragmatist procedure of the sciences in a perfectly masterly way.

6. In reviewing it for *Mind* in October 1897 (N.S. No. 24, p. 548).

7. *Mind* for January 1903 (N.S. No. 45, p. 94).

8. I tried to do this in *Riddles of the Sphinx*, ch. v. §§6-9. But I now think the term needs radical re-wording.

9. James, *Will to Relieve* (p. ix). I have substituted *humanism* for *empiricism*.

2

THE DEFINITION OF PRAGMATISM AND HUMANISM

Real definitions are a standing difficulty for all who have to deal with them, whether as logicians or as scientists, and it is no wonder that dialectical philosophers fight very shy of them, prefer to manipulate their verbal imitations, and count themselves happy if they can get an analysis of the acquired meaning of a word to pass muster instead of a troublesome investigation of the behaviour of a thing. For a real definition, to be adequate, really involves a complete knowledge of the nature of the thing defined. And of what subject of scientific interest can we flatter ourselves to have complete knowledge?

The difficulty, moreover, of defining adequately is in definitely increased when we have to deal with subjects of which our knowledge, or their nature, is rapidly developing, so that our definitions grow obsolete almost as fast as they are made. Nevertheless definitions of some sort are psychologically needed: we must know what things are, enough at least to know what we are discussing. It is just in the most progressive subjects that definitions are most needed to consolidate our acquisitions. In their absence the confusion of thought and the irrelevance of discussion may

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Studies in Humanism, 2nd edn. (London and New York: Macmillan, 1912), pp. 1–21.

reach the most amazing proportions. And so it is the duty of those who labour at such subjects to avail themselves of every opportunity of explaining what they mean, to begin with, and never to weary of redefining their conceptions when the growth of knowledge has enlarged them, even though they may be aware that however assiduously they perform this duty, they will not escape misconception, nor, probably, misrepresentation. The best definitions to use in such circumstances, however, will be genetic ones, explaining how the matters defined have come into the ken of science, and there assumed the shape they have.

All these generalities apply with peculiar force to the fundamental conceptions of the new philosophy. The new ideas have simultaneously broken through the hard crust of academic convention in so many quarters, they can be approached in such a multitude of ways, they radiate into so many possibilities of application, that their promoters run some risk of failing to combine their labours, while their opponents may be pardoned for losing their tempers as well as their heads amid the profusion of uncoordinated movements which the lack of formal definition is calculated to encourage.

Even provisional definitions of Pragmatism and Humanism, therefore, will possess some value, if they succeed in pointing out their central conceptions.

I

The serious student, I dare not say of formal logic, but of the cognitive procedures of the human intelligence, whenever he approaches the theory of actual knowing, at once finds himself confronted with the problem of error.[1] All 'logical propositions', as he calls them, make the same audacious claim upon him. They all claim to be 'true' without reservations or regard for the claims of others. And yet, of course, unless he shuts his eyes to all but the most 'formal' view of 'truth', he knows that the vast majority of these propositions are nothing but specious impostors. They are not really 'true', and actual science has to disallow their claim. The logician, therefore, must take account of this rejection of claims, of this selection of the really 'true' from among apparent 'truths'. In constituting his science, therefore, he has to condemn as 'false' as well as to recognize as 'true', i.e. to evaluate claims to truth.

The question therefore is—How does he effect this? How does he discriminate between propositions which claim to be true, but are not, and claims to truth which are good, and may be shown to be valid? How, that is, are valid truths distinguished from mere claims which may turn out to

be false? These questions are inevitable, and no theory of knowledge which fails to answer them has any claim on our respect. It avows an incompleteness which is as disgraceful as it is inconvenient.

Now from the standpoint of rationalistic intellectualism there is no real answer to these questions, because a priori inspection cannot determine the value of a claim, and experience is needed to decide whether it is good or not.[2] Hence the obscurity, ambiguity, and shiftiness, the general impotence and unreality, of the traditional logic is largely a consequence of its incapacity to deal with this difficulty. For how can you devise any practicable method of evaluating 'truths', if you decline (1) to allow practical applications and the consequences of the working out of claims to affect their validity, if you decline (2) to recognize any intermediate stage in the making of truth between the mere claim and a completed ideal of absolute truth, and if, moreover, (3) you seek to burke the whole question of the *formation* of ideals by assuming that prior to all experience and experiment there exists one immutable ideal towards which all claims *must* converge?

Pragmatism, on the other hand, essays to trace out the actual 'making of truth',[3] the actual ways in which discriminations between the true and the false are effected, and derives from these its generalizations about the method of determining the nature of truth. It is from such empirical observations that it derives its doctrine that when an assertion claims truth, *its consequences are always used to test its claim*. In other words, what follows from its truth for any human interest, and more particularly and in the first place, for the interest with which it is directly concerned, is what established its *real* truth and validity. This is the famous 'Principle of Peirce', which ought to be regarded as the greatest truism, if it had not pleased Intellectualism to take it as the greatest paradox. But that only showed, perhaps, how completely intellectualist traditions could blind philosophers to the simplest facts of cognition. For there was no intrinsic reason why even the extremest intellectualism should have denied that the difference between the truth and the falsehood of an assertion must show itself in some visible, observable way, or that two theories which led to precisely the same practical consequences could be different only in words.

Human interest, then, is vital to the existence of truth: to say that a truth has consequences and that what has none is meaningless, means that it has a bearing upon some human interest. Its 'consequences' must be consequences *to* some one engaged on a real problem *for* some purpose. If it is clearly grasped that the 'truth' with which we are concerned is truth *for man* and that the 'consequences' are human too, it is, however, superfluous to add either (1) that the consequences must be *practical*, or (2) that they must be *good*,[4] in order to distinguish this view sharply from that of rationalism.

For (1) all consequences are 'practical', sooner or later, in the sense of

affecting our action. Even where they do not immediately alter the course of events, they alter our own nature, and cause its actions to be different, and thus lead to different operations on the world.

Similarly (2) if an assertion is to be valuable, and therefore 'true', its consequences must be 'good'. They can only test the truth it claims by forwarding or baffling the interest, by satisfying or thwarting the purpose, which led to the making of the assertion. If they do the one, the assertion is 'good', and *pro tanto* 'true'; if they do the other, it is 'bad' and 'false'. For whatever arouses an interest or forwards an end is judged to be (so far) 'good', whatever baffles or thwarts is judged to be 'bad'. If, therefore, the consequences of an assertion turn out to be in this way 'good', it is valuable for our purposes, and, provisionally at least, establishes itself as 'true'; if they are bad, we reject it as useless and account it 'false', and search for something that satisfies our purpose better, or in extreme cases accept it as a provisional truth concerning a reality we are determined to unmake. Thus the predicates 'true' and 'false' are nothing in the end but indications of logical value, and *as values* akin to and comparable with the values predicated in ethical and aesthetical judgments, which present similar problems of the validation of claims.[5]

The reason, therefore, why truth is said to depend on its consequences is simply this, that if we do not imagine truths to exist immutably and a priori in a supercelestial world, and to descend magically into a passively recipient soul, as rationalists since Plato have continually tried to hold,[6] they must come into being by winning our acceptance. And what rational mode of verification can any one suggest other than this testing by their consequences?

Of course the special nature of the testing depends on the subject-matter, and the nature of the 'experiments' which are in this way made in mathematics, in ethics, in physics, in religion, may seem very diverse superficially.

But there is no reason to set up a peculiar process of verification for the satisfying of a 'purely intellectual' interest, different in kind from the rest, superior in dignity, and autocratic in authority. For (1) there is no pure intellect. If 'pure intellect' does not imply a gross blunder in psychology, and this is probably what it too often meant until the conception was challenged, it means an abstraction, an intellect conceived as void of function, as not applied to any actual problem, as satisfying no purpose. Such an intellect of course would be absurd. Or is it possibly conceived as having the end of amusing its possessor? As achieving this end it may claim somewhat more regard, but apart from its value as exercise, the mere play of the intellect, which is meant for serious work, does not seem intrinsically venerable; it is certainly just as liable to abuse as any other game. And (2) if we

exclude morbid or frivolous excesses, the actual functioning of the intellect, even in what are called its most 'purely intellectual' forms, is only intelligible by reference to human ends and values.

All testing of 'truth', therefore, is fundamentally alike. It is always an appeal to something beyond the original claim. It always implies an experiment. It always involves a *risk* of failure as well as a prospect of success. And it always ends in a valuation. As Prof. Mach has said:[7] "knowledge and error flow from the self-same psychic sources; the issue alone can discriminate between them." We arrive, therefore, at our first definition of Pragmatism as the doctrine that (1) *truths are logical values*, and as the method which systematically tests claims to truth in accordance with this principle.

II

It is easily apparent that it directly follows from this definition of truth that all 'truths' must be verified to be properly true. A 'truth' which will not (or cannot) submit to verification is not yet a truth at all. Its truth is at best potential, its meaning is null or unintelligible, or at most conjectural and dependent on an unfulfilled condition. On its entry into the world of existence a truth-claim has merely commended itself (perhaps provisionally) to its maker. To become really true it has to be tested, and it is tested by being *applied*. Only when this is done, only that is when it is *used*, can it be determined what it really means, and what conditions it must fulfil to be really true. Hence all real truths must have shown themselves to be useful; they must have been applied to some problem of actual knowing, by usefulness in which they were tested and verified.

Hence we arrive at a second formulation of the pragmatic principle, on which Mr. Alfred Sidgwick has justly laid such stress,[8] viz. that (2) *the 'truth' of an assertion depends on its application.* Or, in other words, 'abstract' truths are not fully truths at all. They are truths out of use, unemployed, craving for incarnation in the concrete. It is only in their actual operations upon the world of immediate experience that they cast off their callous ambiguity, that they mean, and live, and show their power. Now in ordinary life men of ordinary intelligence are quite aware of this. They recognize that truth depends very essentially upon context, on who says what, to whom, why, and under what circumstances; they know also that the point of a principle lies in the application thereof, and that it is very hazardous to guide oneself by abstract maxims with a doctrinaire disregard of the peculiarities of the case. The man of science similarly, for all the world-embracing sweep of his generalizations, for all his laudations of inexorable 'law', is perfectly aware that his theoretic anticipations always stand in need

of confirmation in fact, and that if this fails his 'laws' are falsified. They are not true, unless they 'come true'.

The intellectualist philosopher alone has blinded himself to these simple facts. He has dreamt a wondrous dream of a truth that shall be absolutely true, self-testing, and self-dependent, icily exercising an unrestricted sway over a submissive world, whose adoration it requites with no services, and scouting as blasphemy all allusion to use or application. But he cannot point to any truth which realizes his ideal.[9] Even the abstract truths of arithmetic, upon which alone he seems to rest his case, now that the invention of metageometries has shown the 'truth of geometry' to involve also the question of its application, derive their truth from their application to experience. The abstract statement, e.g. that "two and two make four," is always incomplete. We need to know to what 'twos' and 'fours' the dictum is applied. It would not be true of lions and lambs, nor of drops of water, nor of pleasures and pains. The range of application of the abstract truth, therefore, is quite limited. And conceivably it might be so restricted that the truth would become inapplicable to the outer world altogether. Nay, though states of consciousness could always be counted, so long as succession was experienced, it is impossible to see how it could be true to an eternal consciousness. The gods, as Aristotle would have said, seeing that they cannot count, can have no arithmetic.

In short, truths must be used to become true, and (in the end) to stay true. They are also *meant* to be used. They are rules for action. And a rule that is not applied, and remains abstract, rules nothing, and means nothing. Hence we may, once more following Mr. Alfred Sidgwick, regard it as the essence of the pragmatic method that (3) *the meaning of a rule lies in its application*. It rules, that is, and is true, within a definite sphere of application which has been marked out by experiment.

Perhaps, however, it is possible to state the pragmatic character of truth still more incisively by laying it down that ultimately (4) *all meaning depends on purpose*. This formulation grows naturally out of the last two. The making of an assertion, the application of an alleged truth to the experience which tests it, can only occur in the context of and in connexion with some purpose, which defines the nature of the whole ideal experiment.

The dependence of meaning on purpose is beginning to be somewhat extensively recognized, though hardly as yet what havoc this principle must work among the abstractions of intellectualist logic. For it is one of the most distinctive ways in which the pragmatic view of truth can be enunciated, and guards against two of the chief failings of Intellectualism. It contains an implicit protest against the abstraction of logic from psychology: for purpose is as clearly a psychological conception as meaning is professedly a logical one.[10] And it negatives the notion that

truth can depend on how things would appear to an all-embracing, or 'absolute', mind. For such a mind could have no purpose. It could not, that is, select part of its content as an object of special interest to be operated on or aimed at.[11] In human minds, on the other hand, meaning is always selective and purposive.

It is, in fact, a biological function, intimately related to the welfare of the organism. Biologically speaking, the whole mind, of which the intellect forms part, may be conceived as a typically human instrument for effecting adaptations, which has survived and developed by showing itself possessed of an efficacy superior to the devices adopted by other animals. Hence the most essential feature of Pragmatism may well seem its insistence on the fact that (5) *all mental life is purposive*. This insistence in reality embodies the pragmatic protest against naturalism, and as such ought to receive the cordial support of rationalistic idealisms. But it has just been shown that absolutist idealisms have their own difficulties with the conception of purpose, and besides, it is an open secret that they have for the most part long ago reduced the 'spiritual nature of reality' to a mere form, and retired from the struggle against naturalism.[12] A 'spiritual nature of reality' which accepts all the naturalistic negations of human activity and freedom, and leaves no room for any of the characteristic procedures and aspirations of the human spirit, is a more dangerous foe to man's spiritual ambitions than the most downright materialism.

Pragmatism, therefore, must enter its protest against both the extremes that have so nearly met. It must constitute itself into (6) *a systematic protest against all ignoring of the purposiveness of actual knowing*, alike whether it is abstracted from for the sake of the imaginary 'pure' or 'absolute' reason of the rationalists, or eliminated for the sake of an equally imaginary 'pure mechanism' of the materialists. It must insist on the permeation of all actual knowing by interests, purposes, desires, emotions, ends, goods, postulations, choices, etc., and deny that even those doctrines which vociferate their abhorrence of such things are really able to dispense with them. For the human reason is ever gloriously human, even when most it tries to disavow its nature, and to mis-conceive itself. It mercifully interposes an impenetrable veil between us and any truth or reality which is wholly alien to our nature The efforts, therefore, of those who ignore the nature of the instruments they use must ever fail, and fail the more flagrantly the more strenuously they persist in thinking to the end.

If, however, we have the courage and perseverance to persist in thinking to the end, i.e. to form a metaphysic, it is likely that we should arrive at some sort of Voluntarism. For Voluntarism is the metaphysic which most easily accords and harmonizes with the experience of activity with which all our thinking and all our living seem to overflow. Meta-

physics, however, are in a manner luxuries. Men can live quite well without a conscious metaphysic, and the systems even of the most metaphysical are hardly ever quite consistent, or fully thought out. Pragmatism, moreover, is not a metaphysic, though it may, somewhat definitely, point to one. It is really something far more precious, viz. an epistemological method which really describes the facts of actual knowing.

But though it is only a method in the field of logic, it may well confess to its affinities for congenial views in other sciences. It prides itself on its close connexion with psychology. But it clearly takes for granted that the psychology with which it is allied has recognized the reality of purposes. And so it can be conceived as a special application to the sphere of logic of standpoints and methods which extend far beyond its borders. So conceived we may describe it as (7) *a conscious application to epistemology (or logic) of a teleological psychology, which implies, ultimately, a voluntaristic metaphysic*.

These seven formulations of the essence of Pragmatism look, doubtless, very different in words; but they are nevertheless very genuinely equivalent. For they are closely connected, and the 'essence', like the 'definition', of a thing is relative to the point of view from which it is regarded.[13] And the problems raised by Pragmatism are so central that it has points of contact with almost every line of philosophical inquiry, and so is capable of being defined by its relation to this. What is really important, however, is not this or that formulation, but the spirit in which it approaches, and the method by which it examines, its problems. The method we have observed; it is empirical, teleological, and concrete. Its spirit is a bigger thing, which may fitly be denominated Humanism.

III

Humanism is really in itself the simplest of philosophic standpoints; it is merely the perception that the philosophic problem concerns human beings striving to comprehend a world of human experience by the resources of human minds. Not even Pragmatism could be simpler or nearer to an obvious truism of cognitive method. For if man may not presume his own nature in his reasonings about his experience, wherewith, pray, shall he reason? What prospect has he of comprehending a radically alien universe? And yet not even Pragmatism has been more bitterly assailed than the great principle that man is the measure of his experience, and so an ineradicable factor in any world he experiences. The Protagorean principle may sometimes seem paradoxical to the uninstructed, because they think it leaves out of account the 'independence' of the 'external' world. But this is mere misunderstanding. Humanism has no quarrel with

the assumptions of common-sense realism; it does not deny what is popularly described as the 'external' world. It has far too much respect for the pragmatic value of conceptions which de facto work far better than those of the metaphysics which despise and try to supersede them. It insists only that the 'external world' of realism is still dependent on human experience, and perhaps ventures to add also that the data of human experience are not completely used up in the construction of a real external world.[14] Moreover, its assailants are not realists, though, for the purpose of such attacks, they may masquerade as such.[15]

The truth is rather that Humanism gives offence, not because it leaves out, but because it leaves in. It leaves in a great deal intellectualism would like to leave out, a great deal it has no use for, which it would like to extirpate, or at least to keep out of its sight. But Humanism will not assent to the mutilations and expurgations of human nature which have become customary barbarisms in the initiation ceremonies of too many philosophic schools. It demands that man's integral nature shall be used as the whole premiss which philosophy must argue from whole-heartedly, that man's complete satisfaction shall be the conclusion philosophy must aim at, that philosophy shall not cut itself loose from the real problems of life by making initial abstractions which are false, and would not be admirable, even if they were true. Hence it insists on *leaving in* the whole rich luxuriance of individual minds, instead of compressing them all into a single type of 'mind', feigned to be one and immutable; it leaves in also the psychological wealth of every human mind and the complexities of its interests, emotions, volitions, aspirations. By so doing it sacrifices no doubt much illusory simplicity in abstract formulas, but it appreciates and explains vast masses of what before had had to be slurred over as unintelligible fact.[16]

The dislike of Humanism, therefore, is psychological in origin. It arises from the nature of certain human minds who have become too enamoured of the artificial simplifications, or too accustomed to the self-inflicted mutilations, and the self-imposed torments, whereby they hope to merit absorption in absolute truth. These ascetics of the intellectual world must steadfastly oppose the free indulgence in all human powers, the liberty of moving, of improving, of making, of manipulating, which Humanism vindicates for man, and substitutes for the old ideal of an inactive contemplation of a static truth. It is no wonder that the Simeons Stylitae of the old order, hoisted aloft each on the pillar of his metaphysical 'system', resent the disturbance of their restful solitude, 'alone with the Alone', by the hoots of intrusive motor-cars; that the Saint Antonys of the deserts of Pure Thought are infuriated by their conversion into serviceable golf-links; and that the Juggernaut Car of the Absolute gets fewer and fewer votaries to

prostrate themselves beneath its wheels every time it is rolled out of the recesses of its sanctuary—for when man has grown conscious of his powers he will prefer even to chance an encounter with a useful machine to being run over by a useless 'deity'.

The active life of man is continuously being transformed by the progress of modern science, by the knowledge which is power. But not so the 'knowledge' which is 'contemplation', which postpones the test of action, and struggles to evade it. Unfortunately, it is hard to modernize the academic life, and it is this life which is the fountain-head of intellectualism. Academic life naturally tends to produce a certain intellectualistic bias, and to select the natures which incline to it. Intellectualism, therefore, in some form will always be a congenial philosophy which is true to the academic life.

Genuine whole-hearted Humanism, on the other hand, is a singularly difficult attitude to sustain in an academic atmosphere; for the tendencies of the whole mode of life are unceasingly against it. If Protagoras had been a university professor, he would hardly have discovered Humanism; he would more likely have constructed a Nephelococcygia of a system that laid claim to absolute, universal, and eternal truth, or spent his life in overthrowing the discrepant, but no less presumptuous, systems of his colleagues. Fortunately he lived before universities had been invented to regulate, and quench, the thirst for knowledge; he had to earn his living by the voluntary gratitude for instructions which could justify themselves only in his pupils' lives; and so he had to be human and practical, and to take the chill of pedantry off his discourses.

Just because Humanism, then, is true to the larger life of man it must be in some measure false to the artificially secluded studies of a 'seat of learning'; and its acceptance by an academic personage must always mean a triumph over the obvious temptation to idealize and adore the narrownesses of his actual life. However much it exalts the function of man in general, it may always be taken to hint a certain disparagement of the academic man. It needs a certain magnanimity, in short, in a professor to avow himself a Humanist.

Thorough Humanists, therefore, will always be somewhat rare in academic circles. There will always be many who will not be able to avoid convincing themselves of the truth of a method which works like the pragmatic one (and indeed in another twenty years pragmatic convictions will be practically universal), without being able to overcome the intellectualistic influences of their nature and their mode of life. Such persons will be psychologically incapacitated to advance in the path which leads from Pragmatism to Humanism.

Yet this advance is in a manner logical as well as psychological. For

those whose nature predisposes them towards it will find it reasonable and satisfying, and when they have reached the Humanist position and reflect upon the expansion of Pragmatism which it involves, there will seem to be a 'logical' connexion. Pragmatism will seem a special application of Humanism to the theory of knowledge. But Humanism will seem more universal. It will seem to be possessed of a method which is applicable universally, to ethics, to aesthetics, to metaphysics, to theology, to every concern of man, as well as to the theory of knowledge.

Yet there will be no 'logical' compulsion. Here, as always when we come to the important choices of life, we must be free to stop at the lower level, if we are to be free to advance to the higher. We can stop at the epistemological level of Pragmatism (just as we can stop short of philosophy on the scientific plane, and of science on the plane of ordinary life), accepting Pragmatism indeed as the method and analysis of our cognitive procedure, but without seeking to generalize it, or to turn it into a metaphysic. Indeed if our interest is not keen in life as a whole, we are very likely to do something of the kind.

IV

What, then, shall be said of metaphysics? As Pragmatism and Humanism have been defined, neither of them necessitates a metaphysic.[17] Both are methods; the one restricted to the special problem of knowing, the other more widely applicable. And herein lies their value; for methods are necessities of scientific progress, and therefore indispensable. Metaphysics, on the other hand, are really luxuries, personal indulgences that may be conceded to a lifelong devotion to science, but of no coercive objective validity. For there is an immense discrepancy between the ideal claims of metaphysics and the actual facts. By definition metaphysics is (i.e. tries to be) the science of the final synthesis of *all* the data of our experience. But *de facto* these data are (1) insufficient, and (2) individual. Hence (1) the metaphysical synthesis is lacking in cogency: it is imaginative and conjectural. It is the ideal completion of an image of reality which is rough-hewn and fragmentary; it is the reconstruction of a *torso*. Whoever therefore prefers to remain within the bounds of actual knowledge, is entitled to refrain from pledging himself to a metaphysic. He may recognize any realities, he may employ any conceptions and methods, he finds necessary or expedient, without affirming their ultimate validity.

(2) And so those whose spirits crave for an ideal completion and confirmation of knowledge by a metaphysical construction must abate their pretensions. They must renounce the pretence of building what is uni-

versal, and eternal, and objective, and compulsory, and 'valid for intelligence as such'. In view of the actual facts, does it not argue an abysmal conceit and stupendous ignorance of the history of thought to cherish the delusion that of all philosophies one's own alone was destined to win general acceptance *ipsissimis verbis*, or even to be reflected, undimmed and unmodified, in any second soul? Every metaphysic, in point of fact, works up into its structure large masses of subjective material which is individual, and drawn from its author's personal experience. It always takes its final form from an idiosyncrasy.

And, furthermore, this is quite as it should be. If it really is the duty of metaphysics to leave out nothing, to undo abstractions, to aspire to the whole of experience, it *must* have this personal tinge. For a man's personal life must contribute largely to his data, and his idiosyncrasy must colour and pervade whatever he experiences. It is surely the most sinister and fatal of abstractions to abstract from the variety of individual minds, in order to postulate a universal substance in which personal life is obliterated, because one is too ignorant or indolent to cope with its exuberance. Two men, therefore, with different fortunes, histories, and temperaments, *ought not* to arrive at the same metaphysic, nor can they do so honestly; each should react *individually* on the food for thought which *his personal life* affords, and the resulting differences *ought not* to be set aside as void of ultimate significance. Nor is it true or relevant to reply that to admit this means intellectual anarchy. What it means is something quite as distasteful to the absolutist temper, viz. toleration, mutual respect, and practical co-operation.

It means also that we should deign to see facts as they are. For in point of fact, the protest against the tyrannous demand for rigid uniformity is in a sense superfluous. No two men ever really think (and still less feel) alike, even when they profess allegiance to the self-same formulas. Nor does the universe appear to contain the psychological machinery by which such uniformity could be secured. In short, despite all bigotry, a philosophy is always in the last resort the theory of *a* life, and not of life in general or in the abstract.

But though Pragmatism and Humanism are only methods in themselves, it should not be forgotten (1) that methods may be turned into metaphysics by accepting them as ultimate. Whosoever is wholly satisfied by a method may adopt it as his metaphysic, just as he may adopt the working conceptions of a science. Both Pragmatism and Humanism, therefore, may be held as metaphysics: this will induce no difference in their doctrines, but only in the attitude towards them.

(2) Methods may have metaphysical affinities. Thus our last definition of Pragmatism conceived it as derivative from a voluntarist metaphysic. Humanism, similarly, may be affiliated to metaphysical personalism.

(3) Methods may *point*, more or less definitely, to certain metaphysical conclusions. Thus Pragmatism may be taken to point to the ultimate reality of human activity and freedom,[18] to the plasticity and incompleteness of reality,[19] to the reality of the world-process 'in time', and so forth. Humanism, in addition, may point to the personality of whatever cosmic principle we can postulate as ultimate, and to its kinship and sympathy with man.

Clearly, therefore, there is no reason to apprehend that the growth of the new methods of philosophizing will introduce monotonous uniformity into the annals of philosophy. 'Systems' of philosophy will abound as before, and will be as various as ever. But they will probably be more brilliant in their colouring, and more attractive in their form. For they will certainly have to be put forward, and acknowledged, as works of art that bear the impress of a unique and individual soul. Such has always been their nature, but when this is frankly recognized, we shall grow more tolerant and more appreciative. Only we shall probably be less impressed, and therefore less tormented, than now, by unclear thinking and bad writing which try to intimidate us by laying claim to absolute validity. Such 'metaphysics' we shall gently put aside.

It is clear, therefore, that Metaphysic also must hence forth submit its pretensions to the pragmatic test. It will not be valued any longer because of the magniloquent obscurity with which it speaks of unfathomable mysteries which have no real concern with human life, or because it paints fancy pictures which mean nothing to any but their painters. It will henceforth have to test all its assumptions by their working, and above all to test the assumption that 'intellectual satisfaction' is something too sacred to be analysed or understood. It will have to verify its conjectures by propounding doctrines which can be acted on, and tested by their consequences. And that not merely in an individual way. For subjective value any philosophy must of course have—for its inventor. But a valid metaphysic must make good its claims by greater usefulness than that. It need not show itself 'cogent' to all, but it must make itself acceptable to reasonable men, willing to give a trial to its general principles.

Such a valid metaphysic does not exist at present. But there is no reason why it should not come into being. It can be built up piecemeal bit by bit, by the discovery that truths which have been found useful in the sciences may be advantageously taken as ultimate, and combined into a more and more harmonious system. The opposite procedure, that of jumping to some vast uncomprehended generality by an a priori intuition,[20] and then finding that it does not connect up with real life, is neither scientifically tolerable, nor emotionally edifying in the end. All experience hitherto has proved it a delusion. The procedure of a valid metaphysical construction

must be essentially 'inductive', and gradual in its development. For a perfect and complete metaphysic is an ideal defined only by approximation, and attainable only by the perfecting of life. For it would be the theory of such a perfect life, which no one as yet is contriving to live.

NOTES

1. Contrast with this the putting of the question in an absolutist logic, e.g. Mr. Joachim's instructive *Nature of Truth*, which I had not seen when this was written. Mr. Joachim begins at the opposite end with 'the Ideal', and avoids the consideration of Error as long as he can. But when he does come to it, he is completely worsted, and his system is wrecked. Thus the difference between the Absolutist and the Humanist theory lies chiefly in the standpoint; the facts are the same on either view. The question, in fact, resolves itself into this, whether or not 'Logic' is concerned with *human* thought. This the humanist affirms, while the absolutist is under the disadvantage of not daring to deny it *wholly*. Hence the incoherence and inevitable collapse of his theory. Cp. Essay ii. §§16-17.

2. The complete failure of intellectualism to apprehend even the most obvious aims of Pragmatism is amusingly illustrated by Mr. Bradley's fulminations against us on the ground that we cannot possibly distinguish between a random claim and an established truth. He pontifically declares (*Mind*, xiii. p. 322) that the Personal Idealist . . . if he understood his own doctrine must hold any end, however perverted, to be rational, if I insist on it personally, and any idea, however mad, to be the truth, if only some one will have it so." Again, on p. 329, he ludicrously represents us as holding that "I can make and I can unmake fact and truth at my caprice, and every vagary of mine becomes the nature of things. This insane doctrine is what consistency demands', but Mr. Bradley graciously concedes that "I cannot attribute it even to the protagonist of Personal Idealism." Of course if there is one subject which pragmatist logicians may be said to have made their own from the days of Protagoras downwards, it is that of the evaluation of individual claims and their gradual transformation into 'objective' truths (cp. Essay ii. §5). Intellectualists, on the other hand, have ever steadfastly refused to consider the discrepancies arising from the existence of psychological variations in human valuations (cp. p. 532), or lazily preferred to attribute to 'the human', or even to 'the absolute', mind whatever idiosyncrasies they discovered in themselves. Thus inquiry into the actual making of truth has been tabooed, the most important questions have been begged, and both the extent and the limitations of the 'common' world of intersubjective social agreement have been left an unaccountable mystery, sometimes further aggravated by the metaphysical postulation of a superhuman mind conceived as 'common' to all human minds, but really incompetent to enter into relation with any of them, and a fortiori incapable of accounting for their individual differences.

3. Cp. Essay vii.

4. In *Mind*, xiv. N.S. No. 54, p. 236, I tried to draw a distinction between a narrower and a wider 'pragmatism', of which I attributed only the former to Mr. Peirce.

In this I was following James's distinction between the positions that 'truths should have practical consequences', and that they 'consist in their consequences', and that these must be 'good'. Of these he seemed to attribute only the former to Mr. Peirce, and denominated the latter Humanism. But Humanism seems to me to go further still, and not to be restricted to the one question of 'truth'. If, as Mr. Peirce has privately assured me, he had from the first perceived the full consequences of his dictum, the formulation of the whole pragmatic principle must be ascribed to him. But he has also exhibited extensive inability to follow the later developments, and now calls his own specific form of Pragmatism, 'pragmaticism'. See *Monist*, xv. 2.

5. Essay v. §3.

6. Cp. Essay ii. §15, 16.

7. *Erkenntnis und Irrium*, p. 114. The German word '*Erfolg*', translated 'issue', covers both 'consequence' and 'success': it is, in fact, one of many words by which language spontaneously testifies to the pragmatic nature of thought. Cp. 'fact'—'made', 'true'—'trow'—'trust', 'false'—'fail', 'verify', 'come true', 'object'='aim', 'judgment'='decision'; and in German '*wirklich*'—'*wirken*', '*wahr*'—'*bewähren*', '*Wahrnehmung*', '*Tatsache*', etc.

8. *The Application of Logic*, p. 272, and ch. ix. §43.

9. Cp. Essay ii. §§16-18.

10. See Essay iii. §9.

11. See Essay ix. §5.

12. Cp. Essay xii. §5.

13. Cp. *Formal Logic*, pp. 53-4.

14. Cp. Essay xx. §14.

15. Cp. Essay xx. §4.

16. Contrast Mr. Joachim's *Nature of Truth* throughout, especially pp. 167-8, and compare Essay ii. §16.

17. Hence the criticism to which both have frequently been subjected on the ground that they were not metaphysically complete philosophies (e.g. by Dr. S. H. Mellone in *Mind*, xiv. pp. 507-529) involves a certain misconstruction. I can refer the curious to a (or rather *my*) humanist metaphysic in *Riddles of the Sphinx* (new ed. 1910). But the essay on 'Axioms as Postulates' in *Personal Idealism* was epistemological throughout; so were the pragmatic parts of *Humanism*. 'Activity and Substance' does indeed contain some metaphysical construction, but it is not distinctively pragmatic. When, therefore, Dr. Mellone (l.c. p. 528) ascribes to me the assumption of an absolute chaos as the *prius* of experience, condemns it as unthinkable, and finally complains of feeling a 'collapse' when "this incredible metaphysical dogma is suddenly transformed into a methodological postulate," he has made his difficulty by construing my epistemology as metaphysics. Antecedently this misinterpretation would never have seemed possible to me, and so I thought it unnecessary to insert a warning against it. But that several able critics have fallen into this error shows the extent of the confusion of thought induced by the deliberate blurring of the boundaries between logic and metaphysics which we owe to Hegelizing philosophers. If, however, Dr. Mellone will do me the honour of re-reading my doctrine as purely epistemological, he will see that both the difficulty and the 'collapse' were in his own preconceptions. In itself the conception of knowledge as devel-

oping by the progressive determination of a relatively indeterminate and plastic 'matter' never pretended to be more than an analysis of knowledge. It does indeed point to the conceptual limit of a 'first matter' in which as yet no determinations have been acquired, but it does not affirm its positive existence, and it is quite conceivable (1) that our analysis may be brought up against some irreducible datum of fact, and (2) that it should never actually get back to the metaphysical origin of things. Anyhow, the question of the proper metaphysical interpretation of the conceptions used in pragmatic epistemology was not raised. Epistemologically, however, the conception of a determinable plastic 'matter' seems useful enough as descriptive of our knowing, and as innocent and at least as valid as the Aristotelian notion that knowledge always arises out of pro-existent knowledge. Of course such notions get into difficulties when we try to extract from them accounts of the absolute origin of knowledge. But is it so sure that absolute origins can ever be traced? They are certainly not to be had for the asking. For they always seem to involve a demand for the derivation of something out of nothing. And I am not aware that any theory has up to date answered these questions. But I am hopeful that Humanist metaphysics will not be so wildly irrelevant to actual life as in the past metaphysical attempts have mostly been.

18. Cp. Essay xviii.

19. Cp. Essay xix.

20. It matters not at all what that intuition is. Whether we proclaim that All is 'Matter', or 'Spirit', or 'God', we have said nothing, until we have made clear what 'God', 'Spirit', and 'Matter' *are in their application to our actual experience*, and wherein one practically differs from, and excels, the other. But it is just at this point that intuitions are wont to fail their votaries, and to leave them descanting idly on the superiority of one synonym of 'the blessed word Mesopotamia' over the others.

3

ABSOLUTISM AND THE DISSOCIATION OF PERSONALITY

§I. Among the major difficulties which Absolutism encounters in its attempts to conceive the whole world as immanent in a universal mind, must be reckoned what may be called the *imperviousness* of minds, which seem capable of communicating with each other only be elaborate codes of signalling and the employment of material machinery, and the very unsatisfactory character of the relations between the subordinate minds which are supposed to be included in the same Universal Consciousness. There appear, indeed, to exist very great contrasts between the internal contents of the alleged Universal Mind and the contents of a typically sane human mind. In a sane human mind the contents of its consciousness exist harmoniously together; they are not independent of, nor hostile to, each other; they succeed or even supplant each other without a pang, in rational and agreeable way; even where there is what is metaphorically called a mental 'struggle', the process is not painful to the contents, but if to any one, to the mind as a whole which feels the struggle and the distress. If, on the other hand, we conceive ourselves as thoughts of a Universal Mind, what a chaos we must think that mind to be! How strangely dissevered into

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Studies in Humanism, 2nd edn. (London and New York: Macmillan, 1912), pp. 266–273.

units which seem independent and shut up in themselves! How strange that each of its thoughts should fight for its own hand with so little regard for the rest, and fight so furiously! How strange, in short, upon this hypothesis that the world should appear as it does to us! Well may absolutists be driven to confess "we do not know why or how the Absolute divides itself into centres, or the way in which, so divided, it still remains one."[2]

On the fact of the apparent facts, therefore, it cannot be denied that the assertions of absolute idealism are not plausible. In contrast with its monism the world on the face of it looks like the outcome of a rough-and-tumble tussle between a plurality of constituents, like a coming together and battleground of a heterogeneous multitude of beings. It seems, in a word, essentially pluralistic in character. And if, nevertheless, we insist on forcing on it a monistic interpretation, does it not seem as though that monism could only be carried through on the lowest plan, on which existences really seem to be continuous, viz. as extended bodies in space? In other words, must not our monism be materialistic rather than idealistic? The ideal union of existences in an all-embracing mind seems a sheer craving which no amount of dialectical ingenuity can assimilate to the facts, and no metaphysic can a priori bridge the gulf between them and this postulate.

There are, however, so many to whom the idealistic monism of Absolutism forms a faith which satisfies their spiritual needs, that it should be doing them a real service to aid them in thinking out their fundamental conception with the utmost clearness and precision, and it should not be taken as an impertinence to point out how much more there is to be said in its favour than its advocates appear as yet to have discovered. For if only 'absolute idealists' will consent to appeal to experience and empirical evidence, modern psychology provides analogies which remove some of the difficulties which most embarrass them.

§2. The imperviousness and mutual exclusiveness of individual minds may be conceived and explained by an extended use of the conception of the threshold of consciousness. It is, of course, well known that this is variable, that, e.g., the raising of the *limen* which accompanies intense mental concentration, thrusts into subconsciousness a multitude of processes which normally are conscious. On the other hand, much that normally goes on in the organism without consciousness, or full consciousness, may become conscious by an abnormal lowering of the threshold. There is nothing absurd, therefore, in the idea that we might become conscious again of every function of the body, say, of the circulation of the blood, of the growth of every hair, of the life of every cell. Indeed, the only reason why we are not now so conscious would seem to be that no useful end would be served thereby, and that it is teleologically necessary to restrict

consciousness to those processes which cannot yet be handed over with impunity and advantage to a material mechanism.

Now it is clearly quite easy to push this conception one step further, and to conceive individual minds as arising from the raising of the threshold in a larger mind, in which, though apparently disconnected, they would really all be continuously connected below the *limen*, so that on lowering it their continuity would again display itself, and mental processes could pass directly from one mind to another. Particular minds, therefore, would be separate and cut off from each other only in their visible or supraliminal parts, much as a row of islands may really be the tops of submerged mountain chain and would become continuous if the water-level were suddenly lowered. Or to use a more dynamic analogue, they might be likened to the pseudopodia which an amoeba puts forth and withdraws in the course of its vital function. Empirically this subliminal unity of mind might be expected to show itself in the direct transmission of ideas from one mind to another, of ideas, moreover, that would spring up casually, mysteriously, and vaguely, in a mind in which they do not seem to originate. Now this is on the whole the character of the alleged phenomena of 'telepathy', and if absolutists really want to convince men of the plausibility of their ideas, they could adopt no more effective policy than that of establishing the reality of telepathy on an irrefragable basis.

§3. Abnormal psychology, moreover, yields further enlightenments. No one can read Dr. Morton Prince's fascinating book on the *Dissociation of a Personality*[3] without being dazzled by the light thrown on the nature of personality by the tribulations of the 'Beauchamp' family. Here were B. I., 'the Saint'; B. III., 'Sally'; and B. IV. 'the Idiot' (not to mention the minor characters) all apparently complete beings with expressions, beliefs, tastes, preferences, etc., of their own, so diverse and distinctive that no one, who had once discriminated them, could doubt which of them was at any time manifesting through the organism they shared in common. And yet they were all included in a larger self, which was sometimes aware of them and through which knowledge occasionally passed from one to the other. 'The Saint' and 'the Idiot' were shown to be nothing but products of the dissociation of 'the original Miss Beauchamp', who, when she was recalled into existence by the astute manipulations of Dr. Prince and put together again, remembered the careers of both, and recognized them as morbid states of herself. In the relations between 'Sally' and 'the real Miss Beauchamp' the common ground lay apparently still deeper, and the restoration of the latter did not mean the reabsorption of the former, but only her suppression; still it may fairly be assumed that their common relation to the same body must indicate the existence of a plane on which (if it could be reached) 'Sally' and 'the real Miss Beauchamp' would be unified, and

would coalesce into a single being. It was thereby shown that a large amount of superficial diversity and dissociation might co-exist with a substantial unity beneath the surface. The several 'Miss Beauchamps' were to all appearance independent personages, variously cognitive of each other, hating, loving, despising, pitying, fearing, fighting each other, capable of combining together or opposing each other, and so enjoying their troubled life that most of them were determined to maintain their existence, and resented the restoration of 'the real Miss Beauchamp' as their own extinction. The amusing history of their contentions reads very much like that of a very disorderly girls' school; but we can hardly flatter ourselves that the case is too abnormal to have any application to ourselves, because our normal life too plainly exhibits the beginnings of similar dissociations of personality in us, e.g. in dreams, which the 'Sallies' within us clearly weave out of the contents of our minds whenever we are sufficiently disturbed to be susceptible to their wayward pranks.

The great philosophic lesson of the case is, however, this, that the unity of a common substance only constitutes a very partial and imperfect community of interests, and is no sort of guarantee of harmony in the operations and aspirations of the personalities that possess it.

§4. If now we apply this lesson to the universe, it is clear that we have only to multiply indefinitely the phenomena presented by this remarkable case to get an exact representation of the cosmic situation as conceived by Absolutism. On this theory all existences would be secondary personalities of the one Absolute, differing infinitely in their contents, character, and capacity, and capable of co-existence and concurrent manifestation to a much greater extent than were the members of the 'Beauchamp' family, in which this power was possessed only by 'Sally'. We should accordingly all be the 'Idiots', 'Saints', and 'Sallies' of the Universal Beauchamp Family which had been engendered by the 'dissociation' of the Absolute. This might not be altogether pleasing to all of us (especially to those who, like the writer, would seem to have been predestined to be among the 'Sallies' of the Absolute); but the idea itself would be quite conceivable and free from theoretical objection.

Indeed, it would throw much light upon many theoretic problems. If discordance of contents is no bar to unity of substance, the extraordinary jumble of conflicting existences which the world appears to exhibit would become intelligible, and would cease to be a cogent argument in favour of pluralism. The disappearance, again, of personalities at death might merely portend that they were temporarily driven off the scene like 'B. I.' or 'B. IV.', when the other, or 'Sally', controlled the organism; 'dead', that is, in the sense of unaware of what was going on and unable to manifest, but yet capable of reappearing and resuming the thread of their inter-

rupted life after 'losing time'. And so support might here be found for the doctrines of palingenesia and of a cyclic recurrence of events in an unchanging Absolute.

Again, it would become possible to explain the nature and to define the date of 'Creation' better than hitherto. The 'Creation of the World' would mean essentially the great event of the 'dissociation' of the original 'One' into a 'Many', and would be comparable with the catastrophe which broke up 'the original Miss Beauchamp' in 1893. In the Absolute's case the date itself could not, of course, be fixed with such precision, but the date of the disruption of the One into a Many and consequent creation (or, perhaps, rather 'emanation') of the world might be defined as the date at which its present 'dissociation' set in. This change itself it would hardly be possible, and would certainly not be necessary, to regard as an intelligible event. For we should be absolved from the duty of trying to explain it by the fact that *ex hypothesi* it was the dissociation of the rational repose of the One.

As regards that One again some very pretty problems would arise, e.g. as to whether it continued to exist subliminally, able though not willing to recover its unity and to reabsorb the world, or whether its existence was really suspended, pending the restoration of its unity and the reabsorption of the Many, or whether its 'dissociation' into a plurality of related beings was to be regarded as a final and irretrievable act entailing the permanence of the plural world thus generated. The last alternative no doubt would be that most directly indicated by the analogy of the 'Beauchamp' case. For Miss Beauchamp could hardly have recovered her unity without the skilful intervention (from the outside) of Dr. Morton Prince. But in the world's case nothing analogous would seem to be conceivable. As by definition the Absolute is the totality of things, it can never be exposed to outside stimulation, and therefore could not, if once 'dissociated', reunited itself, under curative suggestions from without.

The same conclusion results from a comparison of this conception of the relation of the One and the Many with the very interesting anticipation of it which may be found in Mainländer's *Philosophie der Erlÿsung*. Mainländer very acutely pointed out that in order to explain the unity of the universe it was quite superfluous to assume a still existing One. It was quite enough to ascribe to the Many a common origin, a common descent from the One. Being a pessimist, he further suggested, therefore, that the One had committed suicide, i.e. dissolved itself into a Many, who sharing in its original impulse were also slowly dying out, so that the aimless misery of existence would in the end be terminated by a universal death. By substituting, however, the notion of a 'dissociation' of the One for that of its 'suicide', it is possible not only to adduce a definite psychological analogy, but

also to render the process more intelligible and to safeguard the continuance of the world. Altogether, therefore, the vexed problem of the One and the Many, the puzzle of how to conceive the reality of either without implicitly negating that of the other, seems to be brought several steps nearer to an intelligible solution by these empirical analogies.

§5. Not that, of course, these conceptions would entail no drawbacks. It is a little startling, e.g., at first to have to think of the Absolute as morbidly dissociated, or even as downright mad. But a really resolute monist would not allow himself to be staggered by such inferences. For, in the first place, the objection to a mad Absolute is only an ethical prejudice. And he would have read Mr. Bradley to little purpose,[4] if he had not learnt that ethical prejudices go for very little in the realm of high metaphysics, and that the moral point of view must not be made absolute, because to make it so would be the death of the metaphysic of the Absolute. The fact, therefore, that to our human thinking a dissociated Absolute would be mad, would only prove the limitations of our finite intelligence and should not derogate from its infinite perfection. Moreover, secondly, if the Absolute is to include the whole of a world which contains madness, it is clear that, anyhow, it must, in a sense, be mad. The appearance, that is, which is judged by us to be madness, must be essential to the Absolute's perfection. All that the analogy suggested does is to ascribe a somewhat higher 'degree of reality' to the madness in the Absolute, and to render it a little more conceivable just *how* it is essential.

Less stalwart monists may, no doubt, be a little dismayed by these implications of their creed, and even disposed to develop scruples as to whether, when pursued into details, it superiority over pluralism is quite so pronounced as they had imagined; but in metaphysics at least we must never scruple to be consistent, nor timorously hesitate to follow an argument whithersoever it leads. It must, therefore, be insisted on that absolutism is in these respects a perfectly thinkable, if not exactly an alluring, theory. And we may well display our intellectual sympathy with it by helping to work out its real meaning more clearly than its advocates have hitherto succeeded in doing, or the public in understanding.

NOTES

1. This essay appeared in the *Journal of Philosophy, Psychology, and Scientific Methods* for Aug. 30, 1906 (iii. 18).

2. F. H. Bradley, *Appearance and Reality*, p. 527.

3. Longmans, 1906.

4. See *Appearance and Reality*, ch. xxv.

4

HUMISM AND HUMANISM

The human mind, by nature, abhors novelties far more than a vacuum, and when they are forced upon it by the course of its experience, its natural instinct is to close its eyes to their existence or to explain them away. Now this is as easy as it is natural. For nothing is *absolutely* new. Everything, therefore, can always be conceived as an old thing in a new guise, and, with a little stretching of the one and carving of the other, be classified under the existing rubrics. In this way we are enabled to blind ourselves to the vicissitudes of science and to retain our comfortable belief in the uniformity of nature.

But though it is practically certain that, so soon as it is seriously attempted, accommodation will always be found (or made) for novelties within the fabric of any science, their classification at first is somewhat uncertain and goes frequently astray. It behoves, therefore, those who are interested in them to see to it that they are classified correctly.

Hence it will be useful and enlightening to discuss the attempt to classify the new Humanism as an extended form of Humism. As in all such cases, there is some logical foundation, as well as much psychological

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Studies in Humanism, 2nd edn. (London and New York: Macmillan, 1912), pp. 228–248.

excuse, for the attempt to apperceive the new in terms of the old. It contains some truth, and is partly right. But it is also largely wrong.

To consider this classification in its former aspect first; it is obvious that Humism and Humanism are both *empiricisms* of a pronounced type, and that this constitutes an important resemblance between them. Again, there seems at any rate to be a certain likeness in their attitude towards the metaphysics of the period. The fascinating style and the more than Socratic irony of Hume do indeed render it difficult to determine the exact motives of his philosophizing. But we shall not, probably, go far wrong, if we suppose that his opposition to dogmatism, alike whether it took the form of religious bigotry or of philosophic narrow-mindedness, gave zest to his interest in philosophy. Hume seems to take an impish delight in upsetting religious and philosophic orthodoxies, and his own doctrines seem rather to be selected with this purpose than held with any absolute assurance of their intrinsic worth. Hume is quite willing to admit their defects: after they have served their purpose and done their emancipating work, he is quite ready to disavow his instruments and to affect an attitude of gentlemanly unconcern about the abstruse inanities of theologians and metaphysicians. This temper, indeed, would appear to be the essence of his 'scepticism'. Psychologically regarded, it does not lie in his doctrine, but in his attitude towards theoretic difficulties.

Now, superficially regarded, the Humanist attitude may seem quite similar. It is somewhat lacking in that reverence for academic dogmas, technicalities and shibboleths, which it is often supposed to be desirable and possible to inculcate into the young. It is certainly critical of very deep-rooted assumptions which have hitherto passed current without challenge. It is singularly modest in the claims it makes for its own principles. It makes no attempt to represent them as 'absolute' truths, but puts them forward tentatively as practically efficient working principles, which are worthy of being tried but susceptible, nevertheless, of unceasing improvement. And to a dogmatic metaphysician this hardly seems to be claiming truth for them at all. He finds it easy, therefore, and natural to treat Humanism as a mode of scepticism, and as involving a denial of truth altogether. Then again the humaneness and urbanity of allowing every one a vote in the making of truth, of allowing every mode of experience and of aspiration to count for what it may turn out to be worth, seem monstrous laxity, which must be fatal to the discipline of the intellectual world, and can proceed from nothing but infamous indifference to the sanctity of truth. Thus Humanism, to dogmatically biassed eyes, not only seems to introduce universal suffrage into the philosophic world, but to enable Plato's 'democratic man' to usurp the throne of the Philosopher-King.

So, however strenuously Humanists may disclaim evil designs, there is

one belief which they can hardly hope to eradicate all at once, viz. the hoary tradition that universal experience shows that relativism and 'subjectivism' must end in scepticism and anarchism.

I

Such are, I believe, the feelings and reasonings of those who, without being hopelessly committed to some self-contradictory and untenable form of intellectualism, look upon the new philosophy with suspicion, and conceive it as a revival of Humism. And yet, now that we have indulged their misgivings to this extent, we may fairly call upon them to notice in their turn the important and deep-seated differences, both in attitude and in doctrine, which exist between the theories they are seeking to classify together. (1) For one thing, the Humanists are not distinguished amateurs, concerning themselves with philosophy only to clear out of the way an obstacle to worldly wisdom, but hard-working professionals, themselves leading the academic life, and exposed to all the rigours of the academic atmosphere. (2) They do not themselves draw the sceptical conclusions attributed to them, but protest that their doctrines mean a rescue and a reform and an advance of philosophy. (3) Such a reform, they declare, is rendered necessary by the deplorable state to which metaphysics has been reduced by the collapse of idealism into scepticism, while an advance is no less urgently required if philosophy is to keep pace with the developments of the sciences, particularly of psychology and biology. As regards doctrine, again, the differences are at least as well marked as the resemblances. For though both Humanism and Humism may be classified as empiricisms, there is evidently ample room for divergence within empiricism.

It is not too much to say that the philosophic character of an empiricism depends entirely on how it conceives 'experience'. Now Humanism manifestly conceives 'experience' very differently from Humism. (1) It does not accept Hume's psychology with its associationism and its sensationalism. Its voluntaristic is essentially different from his sensationalistic empiricism, and by comparison with the latter may even be called a sort of apriorism. For a postulate, however much it may have been suggested by experience, is still an anticipation of nature, which we bring to the facts. It has to be assumed *before* it can be 'proved'. Even though it was meant for application to experience, it was assumed because it was desired, even though it serves as a guide in experimentation and a major premiss in argumentation, it is clearly prior to the experience we try to organize thereby. It becomes, therefore, from one point of view, a merely verbal question how the Humanist voluntarism should be classified, and if the form of intellec-

tualism against which it had to contend had been sensationalistic instead of rationalistic, it would doubtless have laid more stress on the very real affinities of the postulate with the a priori.

In fact its epistemological achievement may be said to have destroyed the old antithesis between 'empiricism' and 'apriorism' by rendering both terms ambiguous, and propounding a middle way which forms a third alternative to the epistemological dilemma. Of the dogma 'all knowledge comes from experience' it inquires, 'aye, but from a *passive* experience or an *active*?' Of the dogma 'all knowledge implies an a priori', it inquires 'but *how* a priori? Is it prior as a mere fact of our (present) mental constitution, and so powerless to guarantee its own future continuance, or as an intelligent act of faith?' Clearly, then, a voluntarist a priori, adopted upon the bare suggestion of experience for its methodological value, and established by its continued working, does not fit into the old classification at all.

(2) Humanism does not accept Hume's criticism of causation and his denial of activity, as all intellectualisms are (more or less unwillingly) compelled to do. (3) It is not naturalistic; because it regards the mechanical conception of nature as itself a construction for human purposes, which is valuable and valid because, and in so far as, it subserves these purposes. (4) It is not deterministic, as rationalisms are logically bound to be, but libertarian.

Thus it agrees with Hume only (1) in the belief that the course of events has something to teach us, and brings real enlightenment, because it cannot be predicted with absolute certainty, i.e. in a common empiricism; it agrees (2) that no apriorism can ever give the guarantee it aims at, and assure us of the future, because any 'necessity of thought' may change if human nature changes; it agrees (3) in a common pragmatism, i.e. in their agreement that practical efficiency of a conception is relevant to its truth, and may be pleaded in answer to apparent theoretical defects. But even here the differences are very marked. Hume's pragmatism hardly seems to be sincere; it is always suspiciously suggestive of a blind to disguise his scepticism. Again, Hume's appeal to the pragmatic principle is quite arbitrary and capricious: he uses it to save the face of common sense and (perhaps) of science, but not to rehabilitate philosophy or religion. Lastly, he neither generalizes the principle nor claims for it any *theoretic* validity: i.e. for Hume, as for the rationalist, and as for Kant, there is still an implicit dualism between theory and practice, and a sort of 'independence' of the former, even though this redounds only to its own confusion.

II

On the whole, therefore, it can hardly be contended that the classification of Humanism as Humism is either a very exact or a very fruitful way of assimilating the new to the old. Nay, we may go farther and maintain that upon some of the most important points of philosophical debate there is a profound antithesis between Humism and Humanism, and a very marked congruity between the former and Rationalism. To illustrate by three typical cases: (1) Rationalism and Humism are both intellectualism; Humanism is not; (2) both deny the conception of Activity, which Humanism emphasizes and exploits; (3) Rationalism has in consequence to accept Hume's criticism of Causation, whereas Humanism is enabled to reject it.

The first of these points is really so obvious that a simple statement would suffice for it, if it did not lead to far-reaching consequences which have not yet been observed. As it is, it may be well to point out that, from a voluntarist standpoint, the differences in intellectualisms are quite secondary. Rationalism and Sensationalism can always strike up an alliance against Voluntarism which is cemented by their common appeal to a dark, dumb, irrational, and inexplicable background of 'feeling'.[1] In the shadow of vague terms, whose inveterate ambiguity extends back to the days of Plato,[2] all voluntary action may be reduced to 'feeling', which can be equated with 'sensation', which, again, can be taken as purely cognitive, whenever it is convenient, until every trace of man's free and self-directive activity is wiped out from the philosophic picture. Hence, both intellectualisms can agree on the essential points that (1) intellection is the only philosophically valuable human function; that (2) nothing but intellection is necessary to cognition; that (3) the purer the intellection, the less alloyed with whatever other elements are reluctantly admitted into our nature, the truer and more trustworthy its results; that (4) cognition means rendering the mind *passively receptive* of an already determined, rigid and independent object, variously denominated 'reality' or 'truth'; that (5) in consequence of all these considerations, anything in the nature of human activity or initiative can only (if it exists) exercise a malign and disturbing influence on our cognitive procedure, and must therefore be abstracted from in scientific theory, and repressed in practice.

Humanism, on the contrary, maintains (1) that intellection is not the only valuable function in human life, nor the source of its value; (2) that not merely does 'intellection' not suffice to explain cognition, but that it does not even explain itself, for the reason that real knowing is never a 'purely intellectual' process, but essentially presupposes such non-intellectual aspects as desire, interest, and purpose, which enter into and

control all cognitions; that (3) it is frequently not true to say that the 'purer' the intellection, the more valuable the results; that (4) in consequence cognition, whether perceptual or conceptual, is never a merely passive recognition of an already made object, but always an interaction with a reality which is still capable of being moulded to some extent by our action; (5) that human activity, therefore, is nothing science need be ashamed of or metaphysics frown upon, but is rather the fountain-head of philosophic understanding, which can neither be ignored nor repressed. It will subsequently appear that this difference of attitude towards human activity, which is deducible from the general standpoint of intellectualism, foreshadows the welcome it has accorded to Hume's attack upon the conception of activity.

III

Hume's criticism of the conception of power or activity is quite as clever, and quite as paradoxical as his criticism of the conception of cause. It is even more essential to his naturalism and more radically destructive in its philosophic effects. Yet, strange to say, it has provoked no remonstrance. The champions of the a priori make no fuss about it, the bodyguard of the Pure Reason raise no hue and cry: it is silently and tamely acquiesced in. It is never denounced in lectures as one of the twin pillars of Hume's all-corrupting scepticism; its consequences are never dwelt on; it is never criticized! This extraordinary state of things seems to be due simply to the domination of intellectualism, which has neither the interest nor the ability to contest the assumptions lurking in Hume's ingenious argument.

The argument itself does not occur in the body of the *Treatise of Human Nature*.[3] In writing the *Treatise*, Hume appears to have been chiefly concerned to puzzle the philosophers; so he deals chiefly with the opinions of the learned. Now as these were then, much as now, still under the spell of the intellectualist tradition traceable to Plato, Hume took no notice of the common-sense explanation of the source of the notion of power or agency. He conceives himself to be contending throughout against a metaphysical a priori knowledge of causation by means of which effects could be predicted with certainty prior to all experience. His problem is to find a connexion such that "from a simple view of the one" we can "pronounce that it must be followed by the other."[4] It is to such philosophic accounts of causation that he addresses his triumphant challenges, when he "desires to have pointed out to him" the impression from which the idea of necessary connexion could possibly be derived.

But after publishing the first volume of the *Treatise*, Hume was bound

to come across remonstrances based on a primitively human view of causation which may fairly be called the original philosophy of mankind. This is the *volitional* theory of causation, which models itself on the voluntary control of the bodily organs and accepts the immediately experienced sequence of volition and motion as all we need know of the 'inner nature' of causation. Upon this view the 'impression' which gives rise to the idea of causal efficacy would be simply the every-day experience of voluntary motion, and this simple answer to Hume's theory would be easily and obviously fatal to his whole position.

Hume, therefore, was bound, if possible, to invalidate this theory, and nothing testifies more strikingly to his supreme cleverness than the way in which he meets this difficulty. He promptly inserted in the *Appendix* to the *Treatise* a short passage, in which he points out, very lucidly and consistently, that there is no reason why the sequence of volition and motion should be treated (by him) differently from any other, or regarded as more intelligible.[5] But how seriously he took this volitional theory is attested by the elaborate refutation bestowed on it in the *Enquiry*.[6]

Its gist may be summed up as follows: (1) Hume starts, as in the *Appendix*, from his own analysis of causation as an established truth, and points out that the supposed immediate experience of causal agency is nothing more than a regular sequence, which must accordingly engender the 'custom' or expectation which *is* the causal nexus.

(2) He clearly states his presupposition that real knowledge of causal efficacy must be prior to experience: "were the power or energy of any cause discoverable by the mind, we could foresee the effect even without experience."[7]

(3) He argues specifically that the feeling of power which accompanies voluntary motion is illusory, because (*a*) the union of soul and body and the operation of the one on the other is avowedly a mystery; because (*b*) voluntary control varies greatly with the various organs. Why, on this theory, "has the will an influence over the tongue and fingers and not over the heart or liver?" Again, a man suddenly paralysed is as conscious as ever of a power to command his limbs, though the usual motions no longer ensue. As, however, consciousness never deceives (a comically scholastic maxim!) it never really testifies to any real power. "We learn the influence of our will from experience alone." (*c*) Volitions are not the immediate antecedents of voluntary motions. There are a number of intermediary processes in the brain and the nerves and the muscles, of which we are not conscious. Ergo, the original power felt, the 'sentiment' or 'impression' or 'sensation' of *nisus*, or endeavour, is no proof of a power to move the limbs.

Hume proceeds to argue similarly that neither the felt effort in overcoming the resistance of bodies, nor the voluntary control of our conscious

states, can have given rise to the idea of power; but the latter of these need not be considered by us, as primitive reasoners cannot certainly be credited with introspectiveness enough to have observed it.

IV

The extreme brilliance of this argument is undeniable, but this hardly explains the acceptance it has won from philosophers of all schools, as different as Reid, Hamilton, Mill, and Kant.[8] It is difficult not to believe that its success was largely due also to their intellectualist prejudices and their unawareness of its real scope. For in itself Hume's argument, though brilliant, is by no means invulnerable. Indeed, with a little care, we may detect in its proof several flaws and gaps.

Hume's analysis of the way 'causes' are imputed by us does not go nearly deep enough.

(1) He had no right whatever to start with 'events' and their 'sequences', and to assume that the problem was how to *connect* them. Human activity penetrates more deeply into the making of objects of knowledge than either Hume or Kant suspected. It not only turns 'sequences' into 'consequences', but singles out 'sequences' and 'events' by selection of the relevant, in a way that is always *risky*, and must always seem 'arbitrary' to an intellectualism which is looking for a fool-proof method of absolute cogency. Hume's empiricism takes over uncriticized the pragmatic realities of common sense, which has analysed experience into a coming and going of things and persons in space and time, and tries to distinguish them still further into a series of 'impressions' of which each is to be a 'distinct existence'. But to a more radical empiricism 'experience' presents itself as a continuous flow, out of which 'events', 'effects' and 'sequences' have to be singled out by strenuous efforts, and the causal principle is an instrument of *analysis*. The determinate 'sequences', therefore, for which 'causal connexions' have to be discovered are themselves creations of human attention and interest, and do not exist as such, apart from our volitional activity. Hence they cannot validly produce a basis for a denial of that activity.[9]

(2) It seems to be profoundly vitiated by a confusion between the historical origin and the logical validity of the volitional theory of causation. Hume argues, very plausibly, that the theory is not valid, and infers that it could not have served as the prototype of our causal notions. But this is clearly an *ignoratio elenchi*. Obviously it is no answer to an account of the origination of a belief to show that the belief arrived at is wrong. Still less is it this to show that a further belief derived from this erroneous belief is

also wrong. For our truest and most valuable beliefs have frequently originated in what are now despised as childish errors. The confusion grows worse when we observe that Hume professedly was not inquiring into the validity but into the origin of the belief in causal efficacy. His explanation thereof rested on the psychological impossibility of suggesting any other source for it but uniformity *plus* expectation; not on the logical defects of the proposed alternatives. Hence he involves himself in verbal contradictions which are almost comical. On the same page he declares[10] both that "every idea is copied from some preceding impression or sentiment, . . . there is nothing that produces any impression, nor consequently can suggest any idea of power" and also that we *have* a "sentiment of a *nisus* or endeavour" and "*feel* a customary connexion between ideas" and transfer these "feelings" (or "sensations") to objects.

Whether, therefore, the volitional theory be right or not, Hume's case, as presented by himself, is fatally damaged by the mere suggestion that the immediate experience of voluntary motion was the source whence men first derived their notion of causal efficacy. That historically this was the origin of the belief is nowadays beyond doubt, nor does Hume really deny it. Men and the higher animals all begin their intellectual careers as animists, and animism means that all motion is interpreted on the analogy of voluntary agency, which is a familiar experience to us all long before it is analysed, reflected on or explained away. If, however, Hume had explicitly admitted this as the historical origin of the idea of causation, he would have found himself compelled to face the voluntaristic and humanistic interpretation of experience as a whole, and would have found a way to his own associationism blocked or lengthened.

(3) The argument that the volition-motion sequence is like any other, and explicable in the same way, is valid enough if Hume's assumption is granted. But if it is not, it is simply a *petitio*. And voluntarists are in no wise bound to grant it.[11] They may reasonably reply:—'You must not calmly beg the question of the nature of sequences in a sense favourable to yourself. The real question is *which* sequences are to be chosen as clues to the interpretation of the rest. As to this we and you differ. *We* start *ab intra* from the sequences which we most directly experience, and, treating them as typical, logically arrive at the conceptions of causal efficacy and necessary connexion. We admit, of course, that our method is sheer "anthropomorphism." But then we are Humanists, and know it. *You* on the other hand only cripple yourself by trying to ignore the human character of your intelligence, and refusing to acknowledge the validity of your immediate experience. You insist on starting *ab extra* from the sequences which you observe in the outer world. You assume, that is, that you can know *no more* about yourself than about any one else. And lo, you have no difficulty in showing

that you can know *as little* about yourself as about any one else! But what have you gained? You have only rendered *all* the happenings in the world opaque to your intelligence. And what have you proved? Only that the facts are obligingly ambiguous enough to submit to either interpretation. This we do not dream of denying, and we think your interpretation very clever. But it is quite arbitrary, wrongheaded and superfluous. Moreover, it is vain, because it has *not* refuted ours, on the advantages of which we forbear to enlarge.'

(4) The assumption that knowing a cause supplies also a priori knowledge of the effect may have been made by rationalists who (more or less inconsistently) held also the volitional view of causation. If so, Hume's reply that the limits of our voluntary control of bodies have to be ascertained from experience is so far valid. But it clearly is not self-evident that if volition is the true type of causation this must be known to us before experience. And so Hume's argument does not touch voluntarists who are also empiricists. For these will naturally disclaim any a priori knowledge of causes and regard it as the most natural interpretation of experience to suppose that the consciousness of power is not only the source of the notion, but also good evidence in its favour until there is reason to reject it. They will simply say—'what causes are, and wherein and to what extent we are causes, and what effects we can produce, all this we learn only from experience. And why on earth should we not? Why should we not all, from the baby to the paralytic, have to find out the limitations of our powers from experience? Surely you would not have us assume that we must be born with a complete a priori idea of power and a similar knowledge of all that we are and can? Such an assumption would be enough to make nonsense, not only of our theory, but of any theory on any subject whatsoever!'

(5) The most solid part of Hume's argument, however, is that which disputes the value of the psychological consciousness of agency on physiological grounds, and thus leads on to the epiphenomenal view of mind and the reduction of conscious beings to automata. Indeed it is difficult to see what reply was open to voluntarists at the time. At present, however, thanks to the development of evolutionary and genetic views of life, adequate replies are easily forthcoming.

For example, we may say that the general principle underlying the gradations and variations of voluntary control of different parts of the body is the welfare and efficiency of the organism as a whole. Also that it is in general beneficial to concentrate consciousness (which is connected with what are physiologically the most expensive functions of the higher brain centres) upon those functions which have to be performed in a variable manner, and consequently need the aid of reflection. Functions, on the other hand, which are regular and can be performed in the same way, can

be allowed to become automatic, and even unconscious, at least under normal circumstances. It will then appear that these biological principles amply explain "why the will has influence over the tongue and fingers, and not over the heart and liver."[12] The functions of the one must be conscious, those of the other are better carried on by mechanisms.

The same principles suffice to deal also with the lapsed intermediaries between the volition and the motion, which now escape our consciousness. Historically all these intermediate processes may be regarded as mechanisms which have been developed for the better performance of the motions or the better husbanding or directing of the consciousness. They have, therefore, no interest for themselves, and there is no reason why their normal functioning should be conscious.[13] Primitive organisms, however, manage to perform all the vital functions, for which we now have specialized organs, *without* such mechanisms. We must suppose, therefore, that in their case there are *no* intermediaries involved in voluntary motion, and that so the testimony of consciousness was once literally accurate. It is substantially accurate also in the higher organisms. For if it is generally true that function moulds structure, and if all structures are acquired, then the organism is made by the mode of life it has *chosen*, and as a whole, with all its mechanisms, it is best regarded as an *embodied will*.

As for the failures of voluntary control which are due to morbid degenerations in the organs, how can they prove voluntary control to be unreal? Surely the breakdown of a machine does not prove that it was *not* constructed by intelligence? It proves only that the intelligence was not unlimited.

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On the whole, therefore, Hume cannot be said to have refuted the volitional theory of causation. It yields an answer to Hume which is much simpler, directer, completer, more congruous with common sense and better supported by historical and anthropological evidence than any other. Why, then, has no rationalist even attempted to answer Hume along these lines? Why do they all continue to torment themselves, and to excruciate their readers, by devising devious, obscure, ambiguous, far-fetched, complicated theories to vindicate so simple and successful a human practice as that of postulating causes *ex analogia hominis*, the more so that the 'answers' they achieve always fail to answer the essential point,[14] or at best wander away into metaphysical principles so remote from our experience that they cannot even be applied to it, and so answer neither Hume's nor any other question, and in no wise vindicate our actual human practice? One can

hardly believe that the reason was wholly an instinctive hatred of Humanism, a reluctance to recognize man as a measure of things, and human activity as a real force and a real clue to the nature of the world.

The reason in part cannot but have been a failure to realize the full significance of Hume's results. For this is far more than the refutation of an 'uncritical' theory of causation, far more than the substitution for it of Hume's own theory, far more even than the establishment of a naturalistic and mechanical treatment of the human mind. That a thorough-going Naturalism follows logically and at once from Hume's proof that the conception of human agency rests upon an illusion, is indeed a matter of course. But for this very reason too much importance should not be attached to it. It follows indeed that it is a sad waste of energy for psychologists and epistemologists, who have in principle assented to Hume's assumptions, subsequently to contend for the recognition of mental activity in any shape or form. For even though mental activity were (as I believe it to be) the most real and essential and all-pervasive and ineradicable fact in our nature, and implicit even in the very theories which seek to set it aside, it would yet be vain to try to extort a recognition of its existence from the Humian assumptions, or to describe it in naturalistic terms. How can any one, e.g. confute a polemic which begs the point at issue with the superb audacity of Hume's argument in the *Appendix* to the *Treatise*?[15] First he professes a desire to find a 'perception' on which the causal connexion could be based ; then he assumes (1) that "if perceptions are distinct existences, they form a whole only by being connected together"; (2) that "no connexions among distinct existences are ever discoverable by human understanding." Whence it would clearly follow that, even if we had a 'perception' of causal connexion, it could not, *ex hypothesi*, serve as a *principle of connexion*, by the very fact of its being a 'perception', and so doomed to remain a distinct and disconnected existence![16]

Thus the very attempt to prove the existence of activity to those who insist on taking up a point of view from which it cannot be seen, is a mistake. The true retort to their attitude is to show that it is arbitrary, and does not go deep enough, and that better alternatives exist. Mr. Bradley, however, is quite right from his own point of view, as an intellectualist, as a logician, and as a pupil of Hume, to wage war upon the concept of Activity: he is wrong only in imagining that a conception which has been expunged from psychology and expelled from science can be restored by metaphysics without a monstrous paradox.

But, after all, Naturalism in psychology is a small and comparatively harmless affair. It has its uses, and as a temporary expedient may even be salutary for the restricted purpose of a special science. There is nothing, therefore, in its use that need alarm philosophy. It can always be regarded

as methodological, and need not be taken as true beyond the point at which it ceases to be useful. If the Humian denial of Activity merely meant Naturalism, philosophy could well survive the demonstration.

There are, however, other consequences implicit in Hume's denial which might well appall all but the extremest sceptics, or rather nihilists. If we have the courage to work out the implications of Hume's philosophy completely, it will be seen to come to much more than a revised notion of causation, or than scepticism about some 'axioms' of science. What it comes to is an utter cancellation of all ideas of agency, activity, cause, power, efficacy, force, energy, not only in us, but throughout the Universe. All these terms, it should be noted, are not merely inexact adumbrations of more efficient truths, unsuited for the clear thinking of the sciences; they are essentially illusory and unmeaning, and to be wiped out of the vocabulary of those who would see reality as it truly is. The whole world would thus be reduced to a mere sequence of events, to a flow of uncomprehended happenings within us and without us, of which we should be the impotent spectators, inscrutably endowed with a consciousness which might be written off the ledger of the Universe without affecting its sum total in the least degree. To ask—what makes the Flow flow?—is futile; to control it, is impossible; to observe it, is vain; all we can do (if we can *do* aught) is to let ourselves *drift*, and to cultivate as much equanimity or indifference as we can muster towards what is fated to befall us. In short, the systems of all the sciences are shattered, and the world, whether psychical or physical, relapses into Chaos.

For it would be a great delusion to imagine that the conceptions of the physical sciences can escape from the general *débâcle* of the products of the human intelligence. Their fundamental conceptions, when they are analysed, always, sooner or later, imply ineradicable references to human experiences which have been declared illusory. Thus 'matter' ultimately refers to our feelings of resistance. So does 'force'. 'Motion' involves 'place', and place human experience of the difference between 'here' and 'there' and of 'voluntary' change of place, in default of which we should have no ground for ascribing the changing appearances to the motion of unchanging bodies in space rather than to alterations in the appearances themselves. 'Energy' involves both the 'motion' and the 'work' experience. And so forth. The physical realities, therefore, being dependent on what have become psychical illusions, are themselves rendered illusory. In no place and in no sense have we a right to use any of the tabooed illusions.

The only mystery which apparently remains over is one which the theory disdains to notice, viz. how all these incriminated terms have come into being at all, and why, if they signify nothing and are not true, they are so useful and indispensable. Can it be that some demon, more humorous

than Hume himself, is compelling us to believe, or at least to behave as if we believed, what we know is not true? This difficulty, however, may be respectfully left for intellectualism to contemplate with care. Our Humanism, by the simple expedient of starting from our immediate experience, and declining to admit that it is deceptive and invalid, merely because Hume has exercised his ingenuity to make it appear so, dissolves the whole *mirage* of Humian magic.[17]

If only rationalists would follow our example, what a relief it would be to students of philosophy! For whatever the more than Spartan fortitude with which we endure the difficulties of our subject, do we not all suffer from the paradoxes which its concessions to Hume have imposed on rationalistic philosophy? Should we not confess in our candid moments that it would be a relief to get rid of the paradox, for example, that in the whole universe there either is no agency or activity at all, or that such agency resides solely in the whole *to the exclusion of its parts*?

What again of the Kantian 'answer to Hume'? What a giant paradox it is! How strange that the slur of subjectivity which Hume has cast upon our notion of causation should be held to be removed by extending its scope! And all in vain, because after all the mind does not 'create' the world it makes, and remains dependent on experience for the means to discriminate between a 'casual' and a 'causal', an 'objective' and a 'subjective' sequence. Why then does it not find its material refractory? How does it know that it will not become so in the future? Perhaps it may. But if so, are we not back in complete empiricism, and might not the whole a priori machinery just as well be flung upon the scrap-heap? It is, however, nowadays being pretty widely recognized that Kant's answer to Hume is no real answer at all; but the reason why Kant could not excogitate any real answer is capable of being elucidated. It becomes, at any rate, much clearer when we perceive that having missed the only real answer, viz. the volitional, he had to have recourse to the paradox of ascribing to a being who has been deprived of all agency, power and initiative, the power of enacting rules a priori to which the course of events must conform! But is it not clearly impossible to combine the Kantian assertion of the reality of mental activity with an acceptance of the Humian denial of all human activity?

It would seem then that in this case, as in that of the Humian psychology, Kantian Rationalism is unable to shake off a humiliating dependence upon an insidious doctrine which has managed to beguile it into positions whence an effective rejoinder is no longer possible. It would be interesting to trace out in detail the final fiasco of rationalistic intellectualisms in their controversies with sensationalism, starting from Plato's *Theaetetus*; but this would be to re-write the history of philosophy with a proper attention to the existence of voluntary activity. Enough, at any rate,

has been said to show, not only that the affiliation of Humanism to Humism is extremely misleading, but also to suggest, perhaps, that in reality the boot is on the other leg, and that it is intellectualism alone which is groaning or grovelling in the grip of Hume.

NOTES

1. Mr. Sturt (*Idola Theatri*, ch. v. and ix.) has done good service by pointing out how essentially this conduces to the "passivism" of a rationalistic intellectualism like Mr. F. H. Bradley's.

2. Who in the Theaetetus (156B) includes pleasure, pain, and desire in the list of *αἰσθήσεις*?

3. It is astounding, but characteristic, that, in view of this, the preface to T. H. Green's edition of Hume should contain the assertion that the "only essential difference" between the *Treatise* and the *Enquiry* is "in the way of omissions" made in the latter.

4. *Treatise*, ed. Selby-Bigge, p. 161.

5. Green and Grose barely mention the fact in their edition, but make no comment.

6. §§51-53 and note to §60.

7. Ed. Selby-Bigge, p. 63; cp. also p. 78, note: "These sensations" (of effort) "which are merely animal, and from which we can a priori draw no inference, we are apt to transfer to inanimate objects."

8. Cp. J. S. Mill, *Logic*, III. 5, §11. Mill, like Hume, assumes that the volitional theory cannot be true, if it is not certain 'previous to trial'.

9. Cp. *Formal Logic*, ch. xx. §3. It is clear that in correcting this fundamental error of Hume's we dispose also of all the philosophies which have assumed with him that the task of philosophy is to find principles of *synthesis*. Kant's whole problem, e.g. disappears altogether.

10. Ed. Selby-Bigge, p. 78.

11. Cp. *Studies in Humanism*, p. 230.

12. The existence of individual variations in the extent of this voluntary control is a strong confirmation of this explanation. There are well-attested cases on record where even the beating of the heart could be arrested at will, and it is well known that some people can wag their ears, while others have this power only over their tongue.

13. In most of these cases, however, the withdrawal of consciousness is not absolute. For *disturbances* of normal functioning are usually felt as *pains*.

14. In Kant's case I take this to be the question why in the end the data given *to* the mind should be, and ever continue to be, such that the mind *can* construct a cosmic order out of them.

15. P. 635, ed. Selby-Bigge

16. It is not so clear why "the connexion or determination of the thought to pass from one object to another" which "we only feel" should not yield the

'internal impression" required; but Hume's large and loose way of equating 'impression', 'sensation', and 'perception', greatly helps him in ruling out this possibility.

17. See James on "The Experience of Activity," in *A Pluralistic Universe*.

5

THE MEANING OF 'SELF'

These observations on Dr. Strong's Discussion in the January Number do not spring, assuredly, from any desire contentiously to prolong a somewhat involved controversy. But he has made it so plain that he still thinks that the Self is caught in the dilemma that it must be either an object (or a congeries of objects) or nothing at all, and he is still so unwilling to entertain any alternative which would extricate the Self that I will make one more appeal to philosophers to reconsider the *method* which conducts to this dilemma. For I know that Dr. Strong's attitude is not peculiar to himself. It is exhibited, even more decidedly, by Mr. Russell's *Analysis of Mind*, and although Hume and Mill confessed the bankruptcy of sensationalism on this point long ago, the situation apparently distresses Mr. Russell as little as Dr. Strong. Yet it ought not to be impossible to convince them that their psychological method, plausible as it is in many respects, definitely breaks down over the crucial instance of the Self.

Before, however, endeavouring to show that this 'analysis', after professing to dispense with the Self, continually reintroduces it, I must guard myself against an assumption which not only prejudices Dr. Strong against all I can say but blinds him to the defects of his own theory. The assump-

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Mind 31 (1922), pp. 185–188.

tion is that there are only two conceivable alternatives, so that whatever proves the one untenable *ipso facto* establishes the other. The soul is *either* a product of 'sensations', *or* a metaphysical 'substance'. Now this is neither what I believe, nor what I believe to be true. Accordingly, when Dr. Strong thinks that after rejecting his account there is nothing open to me but a relapse into a 'spiritualistic' psychology with the old metaphysical notion of the self as a simple soul substance, and that therefore I must be trying to make 'consciousness' into "a pigment or menstruum" and "be drifting back from the strictly empirical psychology of James to something like a spiritualistic psychology" (p. 69) an emphatic protest is in order. I have *never* believed in 'consciousness' in the sense condemned by James, and have never held it to be more than an abstraction, or piece of philosophic jargon, devised to conceal the personal character of psychic facts by those who had not the courage to confess it. I hold, on the contrary, that there is no such *thing* as consciousness. The category of 'thing' does not apply to the living. But there are *persons*, and conscious persons, and it is worth considering whether these are not a better clue than 'things' to the 'essence' of reality. The old metaphysical soul, therefore, being a 'thing'—and a futile thing to boot—is quite as objectionable in psychology as any concretion of 'sense-data'. And I object to it no less, and for the same reason, namely, that it too cannot be a self (such as we all are), and it too is incapable of doing what every self habitually and continually does. Neither the one nor the other can both contain, and 'own', and *be*, its personal experiences. This incapacity I trace to a common root in the psychological method which insists on treating the Self as if it were an 'object' for an (external) observer. This treatment seems to be a manifest fiction; but this would not discredit it if it were not plain that in this case it breaks down. That it *does* break down is what I wish to impress on Dr. Strong and Mr. Russell. I am less concerned to show that there is an alternative to the psychological method which breaks down; but if Dr. Strong is willing to envisage this alternative, it is clear that he will have most carefully to beware of treating the Self as an 'object' or a *compositum* of 'sense-data', and that if he will look for such things, with *this* method, he will find them as little as he found 'activities' and 'acts' with his present method.

It may now be possible to illustrate the contention that Dr. Strong's analysis of the Self is not adequate, after disposing of a mutual misunderstanding. It appears from the opening paragraph of Dr. Strong's paper that the 'Self' equated with a 'rush of blood and tension in the head' was not *his*. Nor, certainly, is it *mine*. It was merely *his* notion of what *my* 'self' must be, on the assumption that he had understood it. But as this was not the case, it had better be dropped by common consent.

Dr. Strong's authentic 'self' is, it seems, "*all experience de-objectified*."

What this means, and how it happens, is not quite easy to grasp; but it is clear that as 'de-objectify' is a transitive verb we ought to be informed *who* does the 'de-objectifying'. The process, however, seems to start from "a sensuous state used as the sign of an object" which "conveys the object only in the form of a 'meaning' and does so because we adopt the motor attitude appropriate to the object." Again we note that 'we' is the plural of 'I'; but we are not told *who* 'uses' the sensuous state, and who are the 'we' that 'adopt' the attitude; but the whole description seems to savour of personal activity and to imply the 'self' which is being explained away.

We next learn that the starting-point of this explanation, the 'sensuous state,' is not a fact of experience but a figment of *ex post facto* theorising. For "at the moment of perception, being intent on this meaning, we cannot be aware of the sensuous state." Again who are 'we'? And does not 'intent' connote activity?

Though, however, we can never directly be aware of the 'sensuous state', we can *infer* it. "That it existed at that moment we learn in retrospection, when we consider that the meaning was brought before us only by the sensuous state used as a sign"; and so "the apparent existence of the object was really the existence of the sensuous state or 'I'."

Thus we are asked to believe that what at the moment of experience seemed an 'object' turns out to be, in retrospect, the very 'self'. Dr. Strong's inference has certainly transformed it strangely; but questions may arise both about the adequacy of the description and about the validity of the inference. The description seems inadequate because in 'the moment of perception' also there seemed to be a 'self' actively appropriating the 'objects' it intends, and *this* self at least can hardly have been one of the objects it is charged in retrospect with appropriating and converting to its own 'uses'. Moreover, in retrospecting also, there still seems to be a 'self' at work (the same or another?), and it is this that generates the paradoxical (and possibly mistaken) doctrine of the 'I' that ever knows and is never known. Thus at *both* moments there is found to be a 'self' that is *not* accounted for by Dr. Strong.

But even if we do not cavil at the description, need we pass the inference? If "the apparent existence of the object was really the existence of the 'I'," is not the reality of 'objects' radically impugned by our mature reflexion? Ought we not to infer that the 'I' creates the 'object'?

If Dr. Strong would draw this inference, he would certainly be acquitted of the charge of 'making the ego an illusion'. But what would then become of his realism, which seems to be dearer to him than his very 'self'? He would be accused of making the '*object*' an 'illusion', and 'subjective idealism' is a charge philosophers appear to dread as much as politicians tremble at that of anti-democratic sentiments.

However it is clear that if the 'I' is allowed in this fashion to absorb all 'objects', it must acquire in the process all the activity there is—which according to Hume is not much. But the difficulty will then be how Dr. Strong's egocentric psychology is reconcilable with his 'realistic' metaphysic. I have no doubt he has an answer, but it is not yet apparent to me.

On the other hand I cannot admit that Dr. Strong has explained what I call the 'personal' meaning. He thinks he has, because he has considered a case "in which *I* mean an object" (p. 70); but as shown above it is precisely the meaning of the 'I' and the *modus operandi* of its meaning function that are omitted in the transformation of apparent 'objects' into an 'I'.

Finally I may remark that the passage Dr. Strong quotes from James (p. 70), does not seem to me to be relevant to the point at issue. It illustrates, not the non-existence of transitive and active functions in the psychic process, but the meaning of pragmatic verification by '*leading*' or 'consequences'. Unlike Dr. Strong, James was never oblivious of the empirical fact that experiences are always *owned*, always 'belong' to some one, and did not imagine that he had 'analysed' the 'I': it is natural, however, (though mistaken) for Dr. Strong, who recognises no owner, to claim the support of the passages he quotes, precisely because he sees no problem in the '*I* mean'. But James did, though he did not solve it. And I incline to the belief that no solution of it is conceivable until we abandon the coherent system of fictions which tries to assimilate the method of psychology to that of physics, and to represent 'introspection' as a contemplation of observable 'objects', rather than as the reflective return of an active being on his track.

6

WHY HUMANISM?

I

Behind all philosophy lies human nature, and in every philosopher there lurks a man. The reason why philosophy is mostly so obscure is that we are (not unreasonably) ashamed of ourselves. We are ashamed of human nature, and *therefore* claim for what is reputed best in us, our thoughts, that they soar far above it, and must win the absolute approval of intelligence as such. We are ashamed ourselves, and therefore *camouflage* our motives and our ends. Unfortunately this *camouflage* too often succeeds in deceiving even ourselves: hence there are many philosophies which are, and will ever be, more or less unintelligible, simply because we do not know enough about the men who made them, and so cannot grasp the central idiosyncrasy that held together what to an outside observer seems their incongruous contents. In other cases we have material enough to reconstruct the author's mind: we can then often prove of them what we can suspect in all, viz., that the philosopher, in his exposition, deliberately inverted the natural order of his thinking. His conclusions were his starting-point, and his

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Contemporary British Philosophy: Personal Statements, First Series, ed. J. H. Muirhead (London: George Allen and Unwin, 1924), pp. 385–410.

premisses were painfully sought out to support them. But a philosopher should not be too severely blamed for this sort of thing: he is no more bound than other men to give himself away.

Neither is it surprising that the philosopher's nature should shrink from encountering the real, unequipped, unfortified, and undisguised: he feels to be "all too human" to be exposed to the encounter. Academic decorum therefore demands that many of its parts should be ignored and decently hidden away. So we idealize it at what we take to be its best, and, clothing it in fabrics (or fabrications) cunningly woven of words, surround it with a spiritual atmosphere of convention and make-believe that softens its stark outlines. So long and earnestly have we laboured at such devices that by now the philosopher who seeks the naked truth finds himself enmeshed in a network of fictions more tenacious than Vulcan's net, and immersed in an atmosphere of illusion thicker than any London fog; he needs unusual strength and clearsightedness to break out into the open air and face the facts. Only the intensest love of truth and the highest intellectual and moral courage will nerve him even to raise the questions whether the *parties honteuses* of the soul are as dangerous and disreputable as they are supposed to be.

II

Now experience shows that perhaps the subtlest and most effective of such devices for 'sublimating' human nature is connected with the defining of the provinces of the various sciences, and the allocating to each of its proper field of operation. In the process of drawing the line between two adjacent sciences that operate upon the same *data*, it is quite easy to drop out of sight any feature in human nature which it is desired officially to suppress. The sciences concerned are simply so defined that neither the one nor the other can technically recognize the existence of the obnoxious feature. In this way extensive and vitally important portions of human nature are thrust out of the jurisdiction of science, and are outlawed. This procedure is always in our power: it is quite arbitrary, and, indeed, a mere trick, but none the less effective for that.

Especially when it is played upon the very powers whereby we generate the sciences. The sciences are in all cases fruits of special attention and inquiry directed upon some salient aspect of (apparent) reality: consequently they all rest upon human interest and human selection. Now as such selection necessarily and intentionally neglects what, for the time being, it is not interested in, or does not regard as helpful, it may be denominated an abstraction; but if anyone challenges such an abstraction

as erroneous or useless or neglectful of the relevant, it should always be possible to justify the abstraction, if it is a good one. The justification will take the form—'I am perfectly aware that I have *not* considered the whole of reality, but have picked out a part. But I had no need to consider the whole—which by the way no one can do—and I had a right to pick out the part in which I am interested, and which is important, and sufficient, and valuable for my purpose. Surely you do not dispute my right to concentrate upon whatever suits me, and whatever I need? For unless I did that, no science could arise or serve any useful purpose. You may call my selection an abstraction, if you please; but it is a *good* abstraction, because it yields a good science. For in the last resort a science is good or bad according as it shows itself convenient or otherwise, for the human purposes concerned with it: that is the difference between a science and a mere game with abstractions, and it is the ultimate test to apply.'

To this it is customary to reply that any subordination of science to any human interest derogates from the dignity of science. It sullies the 'purity' of science. It lowers its 'ideal'. It contaminates it with human errors and vices. It humanizes what should be deified, and thus deprives humanity of the superhuman support which the sciences could give if they were conceived as transcending human frailty. Above all, it would so enormously complicate scientific problems if at every step reference had to be made to human personality, purposes and motives, that nothing recognizable as science could result. In short, science must depersonalize and dehumanize itself in self-defence.

III

There is so much speciousness about this rejoinder that to discover how much substance there is in it, and to avoid an inconclusive wrangle, it will be well to examine a leading case where the trick under discussion has long been practised, flagrantly and with signal success. I mean the case of Logic and Psychology. These two sciences are evidently concerned with the same subject-matter, the cognitive operations of human beings and all that appertains thereto. It is evident, therefore, that they must be defined as viewing these operations differently and with different intent. But it is not evident that these differences should lead to any conflict, or even to lack of co-operation, between logic and psychology. Nor is it evident that they must be defined in such a way that everything logical should have to be regarded as transcending psychology, every thing psychological as a hindrance to logic, and everything human as irrelevant to both logic and psychology.

IV

Yet this is precisely what has been done. Psychology has been defined as a descriptive science, concerned with (mental) facts and processes, but *not* concerned with their function, meaning, and value; if it was barely allowed to mention these as existing in fact, it was at any rate prohibited from recognizing their significance. On the other hand, by 'description', more was meant than met the eye. The 'description' was intended to be of a particular sort, viz., that which naturally suggests itself to an external observer. Psychological descriptions were to catalogue the contents of the mind in terms derived from external observation, and as if they were *objects* in the external world. The fact that they weren't, and behaved quite differently, was to be ignored. Psychology must do as the other sciences all did: for how else could its psychologizing be scientific? Still more improper was it to allude to psychical facts which were not, and could not be, 'objects' at all. Hence such things as activities and attitudes, as personality, and, above all, as the subject or self, not being really *things* at all, had to be denied, or else explained away. For the reason, once again, that in the observations of the other sciences, no inquiry was made into the observer. By way of reward for their submissiveness to these *tabus* psychologists were permitted to revel in 'parts' of the soul, 'faculties', and 'elements', in their 'relations', 'associations', 'fusions', and 'complications', *ad nauseam* and *ad absurdum*. For as these were all conceived as *thing-like* entities, no check of the vagaries of psychological imagining was called for. Within these limits psychologies could go as they pleased. No test, no reckoning was demanded of them. No proof was required that the entities they talked about actually existed, and could compose a mind. Not even the logical absurdity of the claim to distinguish 'elements' which could (admittedly) never be isolated or observed 'pure', not even the arbitrariness of 'analyses' which were verified by no synthesis, could moderate the exuberance of psychological theories which neither possessed nor claimed any power to predict and control the actual course of psychic life. For was not psychology a free and pure 'theoretic' science that could neither learn from practice nor instruct it?

V

Logic fared still worse under the arbitrary restrictions imposed on it by its definition. The first condition to which an object of logical contemplation had to submit was that it had to sever itself from its whole natural context. It was called upon in the sacred name of Logic to disavow its origin after the flesh, all its human relations and attachments, and all earthly aims. The

actual judgment, as it occurs in fact, is a human and personal act through and through, and essentially part of a personal train of thought, which arises in an individual mind at some particular time and place. Accordingly it is prompted by some interest, or incited by some imperative need; it is accompanied by emotions, and aims at the satisfaction of some desired end. Its procedure, moreover, appears to be quite high-handed, not to say self-willed: it *selects* its object and runs infinite *risks* of error in so doing; it experiments with ideas, it resolves doubts, answers questions, and decides between alternatives. It has thus a varied past, and expects to have a future. For it looks forward to its verification, and leads on to other judgments, without end. Moreover, it has personal relations with its maker. It claims to express his meaning and to serve his purpose. Lastly, it lays claim to *value*: it claims to be the *best* and *truest* judgment he could have made under the circumstances. For else would he not have made another?

Such are the plain and undeniable features of every actual judgment, and it might be supposed that Logic would be glad to notice them. But not at all: the traditional definitions of logic all require it to set them aside as logically irrelevant, or disastrous. 'Logic' prefers to deal with 'propositions', i.e. with depersonalized strings of words, which may be used to convey (various) meanings by various persons at various times, but are actually devoid of meaning as they stand. It then becomes, not a study of thought, but of the verbal implications of 'dictionary-meanings'. This is the procedure of formal Logic which has been academically taught as the theory of thought for over two thousand years, although it is doubtful whether any one has ever used it in his own thinking.[1]

Or else, if the term 'judgment' is retained, it is only on condition that it is depersonalized and dehumanized, until it can no longer exist, certainly on earth, and probably in heaven. To fit it for 'logical' use the judgment has in the first place to be purged of all taint of the psychic and 'subjective' *milieu* in which it was born. This involves the repudiation of its whole human ancestry and antecedents, of its date and place in the world, of its use and function, of its purposiveness, of the meaning it was intended to convey. In return for these sacrifices it is promised an apotheosis. It is promised 'eternal' (or at least timeless) truth, 'universality', formal validity and immunity from error, a prospect of 'absolute' truth, and a diviner meaning in place of that which it had to jettison. For it is now assured that it never meant, or could mean, what its maker meant, and wanted it to mean, but always unwittingly aspired to a loftier destiny. As made, it was a poor and partial thing, a mere selection from the infinite wealth of the totality of reality, and vitiated to the core by unexpressed and unknown conditions, exposing it for ever to invasions from the circumambient whole, and destroying its truth. Surely no self-respecting judgment could

endure so precarious a lot: it must aim at expanding and re-stating itself until it was enabled to express the whole truth and nothing but the truth. Thus would all judgments ultimately be glorified by one and the same meaning, and transfigured by referring to the Absolute Reality.

VI

True, these dazzling promises, which rest on an obliteration of the distinction between logic and metaphysics, are not kept. It turns out before long that no judgment, no discursive thought, in 'relational form' can reach the Absolute, or become absolutely true; nor can any validity of form guarantee correctness of application, and so real truth.[2] Nor, lastly, can any judgment quite escape from its entanglement in psychical irrelevance. What, however, finally becomes of these artifacts of 'Logic', the all-embracing judgment and the self-developing inference, is not made clear. They are too feeble to rise to the Absolute, too mutilated to return to earth. After their failure, 'Logic' appears to lose its interest in them, and leaves them to flit about the region of 'appearance' in ghostly guise, incapable alike of full truth and full blown error, and impotent to affect the actual reasonings of men.

Thus 'Logic', so defined, fails in the end to make good its own claim.[3] But even if metaphysical logic could keep its delusive promises, two important questions would remain unanswered. In the first place, what meaning and what value does this 'logic' allow to the procedures and problems of human thinking? The answer is plainly *None!*—they simply drop out. The facts of human thinking and knowing are non-suited, both in 'Logic' and in Psychology, and can make themselves heard in neither. But, secondly, they nevertheless continue to exist. So what is to be done with them? 'Logic' cannot say: but man must insist that, if they are facts, they can be studied scientifically, and that their study will be infinitely more important than either 'Logic' or 'Psychology'.

VII

A similar *tour de force* is played with the antithesis of 'theory' and ' practice'. It is first assumed that this antithesis is absolute, and then inferred that there can be no necessary or inherent connexion between theory and practice. It matters not that this is a pure assumption, and moreover one which runs directly counter to a multitude of facts. If it is true, how is it that 'practical' needs are continuously setting on foot theoretic inquiries, and that theoretic speculations are continually conducting to practical applications,

or that practical success is so potent in silencing theoretic doubt, and that theoretic certainty is sensibly enhanced by practical confirmation? These relations can hardly all be entirely fortuitous, and they forcibly suggest that the initial definitions of 'theory' and 'practice' as absolutely different were simply devices for obscuring the facts which connect them, and reveal them both as contributory to the ends of human life.

This suspicion is confirmed when the notion of 'pure theory' is confronted with the facts of scientific inquiry; for it then appears to be a psychical fact that there is no such thing as a truly 'disinterested' inquiry. All inquiry seems to be inspired by an interest—even if it is no better than sheer curiosity—and to aim at a good that is worth pursuing in the inquirer's eyes. Furthermore, his whole inquiry is an *activity* in which every step is one he wills to take, and so his *act*. Hence a 'pure' thought that does not aim at ends ('goods') to be achieved by the activity, appears to be psychologically impossible. If it were not, it would be a game and a frivolity: but even games have their uses and practical value, biologically and sociologically, even though those who play them may be unaware of them, and may be indulging only in the satisfaction of an instinct. Is it clear, then, that if we take 'practical' widely enough, as meaning 'concerned with the business of living', not only does its antithesis to 'theoretic' become relative, but all our thoughts and all our acts must be 'practical'? For good or evil; for even our most irrational, trivial, and futile acts must have a bearing on our success in life.

VIII

Have the foregoing sections explained and justified the adoption of the name 'Humanism' by the systematic protest against the artificial elimination of the human aspects of knowing in the intellectualist versions of logic and psychology? Has it also become clear that there is nothing emotional or irrational in this protest? It is not asserted that intellectualism is reprehensible or repugnant as such; it is not denied that (up to a point at any rate) alternative descriptions may be framed, or even that for different purposes different descriptions and demarcations may be found convenient. Neither is it denied that the terminology of intellectualism is one of the persistent dialects of philosophy. Only it is not the dialect in which to describe the intelligence of a living being. It rests on abstractions which are, biologically, incredible. The objection to actual intellectualism, therefore, is that it misrepresents our intelligence, and does not render our actions intelligible. The objection to actual rationalism is that its attempt to reduce everything to a dehumanized 'Reason' makes everything unreasonable.

And the objection to *both* is that *they leave out far too much*, and, on their own showing, fail to make intelligible even the few facts they are willing to acknowledge. Is it not high time therefore to try whether a more activistic or voluntaristic interpretation will not prove more comprehensive and more comprehensible?

IX

Humanist Voluntarism, then, though it aims at superseding Rationalism, is not the foe of reason. Only it refuses to ignore the behaviour of human reason and to cut it adrift from the human life it ought to guide. It thinks the a priori reasons given for this severance bad. It prefers to take 'reason' as it empirically finds it, and to study it in life, active and free, and not *in vitro*, dead, bottled up, and preserved in spirits. Similarly, it does not mean anything metaphysical by 'will' (like Schopenhauer), nor commit itself to any fiction of a special 'faculty'. It uses 'will' merely as a convenient term for recognizing an all-pervasive and essential feature in human life, to wit the *active* side of our nature, which it thinks has been unjustly and disastrously ignored for the reasons analysed in §§II–VI. And it believes that its recognition would have a very beneficial and clarifying effect on a number of important philosophic problems which have hitherto defied solution.

X

For example, it throws a new light on the old controversy about the origin of knowledge, which Rationalism and Empiricism have carried on so inconclusively, mediating between these extremes, and showing where each was right and each was wrong.

In the first place only the maddest rationalism could really hold that experience was valueless and totally irrelevant to knowledge. Rationalisms have sometimes been driven very nearly into such assertions; but against their will. They were usually content to maintain—and did tenaciously maintain—that experience (as described) could not account for all that was implied in knowledge. Certain truths—or at any rate certain forms of thought—could not come from experience, because the experience from which they were said to be derived could only arise in a mind already possessed of these forms. Consequently it was inferred that these forms must be a priori, prior to experience, and rooted in some superior region of the mind.

After long debate, rationalism had so far succeeded in making out its case. But its victory was far from complete, and it had *not* made out its

claim that the defeat of (a particular sort of) empiricism was *ipso facto* proof positive of its own contentions. And it had made use of some pretty precarious inferences. It had begun by establishing a negative; not all knowledge could come from experience. To pass from that to 'therefore it must be a priori' was not cogent; 'therefore experience must have been misdescribed' was a possible alternative. And even after the a priori had been reached, its meaning was very vague, and nearly negative; it meant little but 'what cannot be traced to experience'. And to rest one's positive account of knowledge on a presumed inability of one's adversary to account for it was a precarious proceeding, because a new way of conceiving experience, or deriving the 'a priori' from it, might at any time invalidate the case for the a priori of rationalism. Also 'a priori' was so vague a term as to cover almost anything; it left rationalism ample licence in filling in the bare outlines of the a priori. But the rationalist mythologies, which attempted to describe the a priori nature and structure of the soul, all seemed highly improbable and incredible, from Plato's day to Hegel's. Finally it has to be observed that to defeat empiricism is not to utilize experience, and to vindicate an a priori is not enough to make knowledge intelligible, so long as it is analysed into two alien and hostile factors that are tied together, but not enabled to work together.

Empiricism, on the other hand, though technically defeated, was not rendered powerless. It had incurred defeat by its own mistakes in stating its principle and by its perversity in adopting that of its adversary. For it had not come to the study of experience with an open mind, but with a *parti pris*, with a prejudice as to its nature. It had recognized nothing in experience but what could be set down to passive receptivity of 'impressions', and had thereby ruled out the possibility that the knower might *react* upon his impressions and manipulate them selectively, appropriating some and ignoring others, according to his needs, nay, going so far as to *make demands* on nature and experimenting with it in order to extract responses to his questions and satisfactions of his desires. Now, in ruling out these fairly obvious possibilities, what was empiricism exhibiting but a priori prejudice?

Accordingly there is room for an improved version on both sides. The field is open for a new empiricism and for a new conception of the a priori. After all, a certain apriorism enters into every empiricism, in that, to begin with, it has to decide what *shall count* as 'experience'. Most empiricisms are very selective, and rule out a priori such stuff as dreams, hallucinations, and various sorts of 'abnormal' experience. Similarly, every apriorism becomes at a certain point empirical. It must claim for its a priori structures existence as empirical fact. And that they are such as they are, and not otherwise, must be just fact too. As, then, the two sides seem to converge, these two novelties may well turn out to be one and the same. If, among the facts of

experience, the empiricist is willing to include an actively inquiring mind, he will be able to explain how a knower can use conceptions that do not 'come from experience', and yet are not 'prior' to it, seeing that they are *suggested* by it, and adopted long before they are *proved*, because they seem acceptable and desirable, and likely to give satisfaction when verified. Such conceptions would be essentially *postulates*, suggested, no doubt, by experience (more or less directly), but really rooted in the demands and cravings of the subject, and thereafter *brought to* the interpretation of experience, and more or less *forced* upon it. But though subjective in origin, they may clearly acquire objective validity. For after solipsism has been repudiated as *practically* untenable, experience has to be conceived as a joint product, which is what it is because the subject is affected by other beings that are also active. Hence to try a postulate is one thing, to succeed with it is another. Of the postulates that are tried—and their name is legion—many have to be abandoned, like those of 'magic' and of 'superstition': others remain precarious and more or less 'matters of faith', like those of religion; only a few rise to be unquestioned *axioms*.[4]

Similarly, if the apriorist will consent to go into the question *how* a priori?, he will see that the a priori need not be a piece of mental furniture, nor a coercive 'necessity of thought'. It need not be rooted in what he considers 'thought' at all, but may proceed from activity or 'will'. Thus desire or will, *alias* our whole purposive nature, may generate the preconceptions or demands with which we approach the given, and which we try to realize. After which experience will have its say as before, and decide whether they are to be ratified or rejected. For, of course, the stubborn nature of things may defeat our endeavours.

Thus our final 'knowledge' will be neither wholly a priori nor wholly empirical. It will be a product of the continual interplay and interaction of the knower and his world, and will owe its character to *both*. It is evident that this theory regards both factors as essential, utilizes both, and combines them in the closest intimacy. Thus it does justice to everything that was valuable in both empiricism and apriorism, and really effects their synthesis. Knowledge becomes a continuously developing process to which no term need be set.

XI

For confirmation of this account of knowledge Humanism can confidently appeal to the procedure of the sciences. This has been systematically misrepresented by formal logicians, who have been unwilling to recognize that it is concerned with probable, and not with 'formally valid', reasoning, and

so have laboured to force methods of *discovery* into conformity with their (unrealizable) 'ideals' of *proof*.[5] But if scientific procedure be studied, not in its dogmatic re-statement in terms of the current orthodoxy and with its delusive claim to finality, but in its historical development, it will soon be evident that it neither has, nor really claims, the finality, certainty, and absoluteness with which it is decorated, and, so far from being fixed, static, and eternal, is essentially in process and undergoes continuous transformation—for the better. The scientist who understands his method never dreams of saying: 'All have been in error hitherto, but now *I* have discovered the absolute truth,' any more than he says: 'Nothing but sheer coercion will make *me* acknowledge a truth.' He is content to work out slightly better methods than his predecessors, and to use any assumption he *needs*.

Actually scientific truth arises out of needs and problems, urgent or interesting, or, as Dewey says, out of the constant need to reconstruct our beliefs in order to adapt them to the varying situations of life. These problems we endeavour to solve by hypotheses, which are not idle, but are meant to be used. Their *value* is *tested by* their *working*, and to survive they have to be *verified*. If, that is, the consequences they predict occur in fact, if they really give us control over events, their claim to truth is confirmed; if they fail, and are falsified by the facts, they are scrapped—unless they are supported by very strong postulates which prompt us to modify them and to try again. But no amount of verification ever amounts to absolute and final proof; its very form involves it in the formal flaw of 'affirming the consequent'. Hence we can never argue that because the deductions from a theory have come true, the theory is true: the same deductions, *and more*, might be drawn from another (and better) theory. So the most that can be claimed for a theory is that it is the *best and truest up to date*, and science never renounces the hope of finding one better and truer still. Hence scientific truth is essentially improvable and progressive. It progresses by the continuous correction of 'errors' (= truths of *inferior* value), and the continual augmentation of the value of the truths accepted. Thus no truth is eternal; every truth has its day. But this does not matter so long as sufficient for the day is the truth thereof.

Now all this implies that no scientific truth is incorrigibly absolute and final. For if it were, it could not be improved upon. Language recognizes this, when it equips 'true' with a comparative and a superlative. History, moreover, shows that scientific truths *are* improvable; the more progressive a science is, the more quickly do its 'truths' pass into 'errors', and yield their title to superior successors.

This interpretation of scientific procedure accounts, moreover, for the hopefulness of science; whereas, if we construe it as an (unavailing) pursuit of absolute truth, it is doomed to perpetual failure and disillusionment, as each successive truth is hailed as absolute, and then found to be erroneous.

The history of science then becomes merely a passage from one error to another, and an argument for scepticism.

XII

Humanism, it is plain, has arrived at a very distinctive theory of truth. It has to pay a price for it, but the advantages are many. The price is the repudiation of 'absolute' truth as an *ignis fatuus*: the main advantages are the rescue of truth from this same morass haunted by will-o'-the-wisps, in which it has floundered so long, and the construction of an adequate theory of truth. It proceeds as follows. Noticing that in real life a risk of error always attends the search for truth, it conceives truth and falsity as, respectively, the positive and the negative values belonging to the normative science of logic. Noticing that every judgment, whether actually true or false, claims to be true when made (in good faith) by its maker, it assigns to this normative science, as its function, the evaluation of truth-claims. Noticing that the truth-claim of a judgment is quite formal and universal, it realizes that it cannot ever be the real point at issue, or the meaning of 'truth' in real life; nor consequently the real interest of logic. The formal truth-claim, therefore, must always be evaluated critically. It is not to be admitted as really true, until it has been tested, and more or less validated. This testing is effected, in the first instance, by ideal experiments with alternatives in its maker's mind, *before* the judgment is announced; but mainly in the consequences it is found to entail *after* it has been published. Hence it will be seen that (effective) truth depends upon the consequences. This is true even for the maker of the judgment, who retains the right to withdraw or amend his judgment in the light of its working. It is true also of judgments about the past, which are always generated by a present interest, and refer to tests of their truth which have not yet been made when they are propounded, and so are still in the future. It holds generally of all the special cases of 'truth', not excepting mathematical truth, if only care is taken to provide real judgments and not mere verbal forms.[6] And it is obvious that no definite amount of testing is prescribed or needed, just because no finality is aimed at. The amount required is determined in each case by the nature of the inquiry and the purpose of the inquirer: it has merely to be sufficient.

XIII

In addition to being simple and comprehensive, this theory of truth has other advantages. (1) As was shown in §XI, it keeps closely in touch with

scientific procedure, and indeed regards itself as the true philosophic interpretation thereof.

(2) It accounts for 'error' as well as for 'truth', and puts their relations on an intelligible footing. An 'error' is conceived as the object of a value-judgment condemning a (relative) *failure* of cognitive effort, and as an acceptance of an inferior value when a superior value is available. Thus 'truth' and 'error' both become incidents in the progressive growth of knowledge, and are no longer opposed to each other in implacable enmity. An intelligent error may even be the next best thing to a truth, and a step towards its attainment. For the way to truth commonly lies through a continuous correction of errors, and the risk of error attends all truth-seeking. A 'truth' that tries to avoid this risk and to claim immunity from error is not real truth for man at all, but either a dangerous illusion or a mere piece of formalism.

(3) It is the only theory of truth that has not hopelessly broken down. Of the others, (*a*) the 'Correspondence' theory, by trying to base truth on some sort of agreement with a reality which transcends experience, cannot be tested and is inaccessible to knowledge, manifestly makes truth meaningless by definition. (*b*) The 'Intuitional' theory condemns itself by its incapacity to discriminate the intuitions which it accepts as intuitively (and absolutely) true from self-evident delusions. (*c*) The 'Coherence' theory, by reserving truth for the Absolute, renders it unattainable by man, and scorns to discriminate human truth from human error. It does well, perhaps, to confound logic with metaphysics, for logically it is as incoherent a theory as could well be devised. It professes to derive its belief in absolute truth from truths which it subsequently proves *not* to be absolute, its belief that coherence is the essence of truth from the coherence of human systems which the absolute system subsequently convicts of incoherence, and, from the existence of scientific systems which are partial and constructed by selections and rejections, it concludes to an all-inclusive system which *ex officio* cannot select or reject anything![7]

Now while it is not true that a theory can be proved absolutely by the failure of its competitors, we may accept a theory which makes intelligible so vitally important a subject as truth and error, at any rate until something better is devised.

XIV

I have endeavoured so far to show how the chief doctrines of Humanism are interrelated and develop out of each other, if we conceive Humanism as primarily a reform of logic which removes the unwarranted *tabu* put on

the personal side of knowing. But there are many other starting points from which the same conclusions could have been reached almost as conveniently. For many ways may lead to the core of Humanism, even as there radiate from it many applications. One might, e.g., have studied its development historically, and traced its ancestry back to Protagoras's dictum that man is the measure of all things.[8] Or, again, one might have conceived it as an application of the biological idea of survival-value to the realm of beliefs; or have extracted it from reflexion upon the logical significance of the theological virtue of faith in the realm of religion. Similarly, it is to a great extent optional what we regard as application and what as a matter of principle. In any case the applications of Humanism are too numerous, interesting, and important to be adequately treated in the limited space at my disposal. I shall have, therefore, to confine myself to a few consequential topics which experience shows are particularly liable to be misapprehended.

XV

In what sense does Humanism make usefulness the criterion of truth? And what are the implications of saying that all truth must be useful. Does it reduce truth to usefulness? Does it follow that anything useful forthwith ranks as true, and, again, that usefulness is solely and completely measured in pounds, shillings, and pence, or rather in dollars, and cents?

The answer to these latter questions is—*By no means!* and if many philosophers have written as though they believed that these implications did follow, it must have been because they had for the moment (or for the purpose!) become oblivious of the elementary rule of formal logic which prohibits the 'simple conversion' of 'A' propositions. From 'all truths are useful' and 'work', it does *not* follow that anything useful or anything that works (say a lie!) is true. And humanists have never committed this blunder or entertained this delusion. They have always been aware of the vogue and use of lies, errors, and fictions, and other sorts of truth-claim which no one in his senses would classify as properly 'truths'. Indeed, just because they distinguished so sharply between truth-claims and truths, they have found it necessary to map out the extensive region of truth-claim, to classify its denizens, and to assign to each of them their proper locality and status. The classification turns out far more complicated than intellectualist logic had supposed. There occur among truth-claims not only truths and errors, but the lie, the fiction, the make-believe, the joke, the methodological assumption, the methodological fiction, the postulate and the axiom. All these have to be analysed, and distinguished, and related to one another. All, moreover,

have their uses, and among them is that of providing a cogent confutation of the absurd idea that whatever is useful is true.

It is hardly less important to understand the 'useful' aright. Its proper meaning lies in the relation or 'category' of means-and-ends. Any means to any end is useful for that end. What *is* of use, therefore, is primarily a question of psychical fact. It depends on the end adopted and the means chosen. But as there is everywhere considerable social criticism and control of the individual's tastes and activities, neither his ends nor his means always meet with social approbation. So what he considers worth doing for the sake of a desirable end may be socially condemned as a useless, or even pernicious, pursuit. Hence, in discussing 'usefulness', it is well to guard against this sort of ambiguity, and to make it clear, not only *for what*, but also *by whom*, this quality is claimed.

XVI

Questions much more difficult than those about the usefulness of truth arise concerning its 'working'. 'Working' is clearly a wide generic term, and it is legitimate to ask what precisely is covered by it. But for several reasons this question is difficult to answer. In the first place, it is easy enough to point to the ordinary scientific working, the relevance of which no one would deny. If a chemical theory leads to the observation of chemical facts which confirm it, it is readily inferred that, as the theory works, it is true. Here it is plain that the theory to be tested, and the working which tests it, are *in pari materia*. In other cases neither this congruity nor the logical cogency of the 'working' is so plain. Is, e.g., a moral theory proved true by its moral working and the salutary influence it has on the conduct of those who believe it? If so, Heaven and Hell might be easy to prove. In other cases the theory that works and the working that confirms it appear to belong more or less definitely to different planes of reality. Is the existence of God proved by the spiritual comfort derived from the belief in God? Many would deny the relevance and validity of this sort of working, and though it can no longer be taken as certain that they are right, the value of *this* working is clearly disputable. Finally, we find in biology a sort of working, which, while wholly devoid of any rational appeal, yet exercises a far-reaching influence on our beliefs, and is capable of determining their adoption and the elimination of their contraries. We may call it *survival-value*. If the belief A has high survival-value, it is sure to commend itself to many, and to be adopted as true: if the belief B has negative survival-value, it tends to eliminate those who hold it, and so itself. Shall we say, then, that this natural selection among beliefs proves A to be true, and B to be false? It

seems repugnant to allow so irrational a process to determine our beliefs: yet it is undeniably effective, and it is hard to set a limit to its efficacy.

We learn from these examples that the question what 'workings' shall be held relevant to the truth of a theory is not one to be settled off-hand. The truth is that the differences of opinion as to what workings are to be relevant to what truth-claims are correlated with some of the profoundest differences in human temperaments. Men take up different attitudes towards different workings because they themselves are temperamentally different. It is unreasonable therefore to expect a general theory of cognitive method to produce forthwith uniformity and agreement among men.

XVII

Among the questions which have been most debated in connexion with the humanist and pragmatist attitude in philosophy is undoubtedly that of the 'Will to believe'. But as it is also one in which the temperamental factor just noticed is conspicuous, it is not one likely to be settled just yet.

Up to a point its discussion is plain sailing. In itself the existence of a Will to believe is merely consequential on any voluntarist interpretation of human nature. It is also easily verified as an empirical fact. So is the existence of a Will to disbelieve, where the consequences of belief would be distasteful. Only an utterly intellectualist psychology could refuse to recognize these tendencies as psychic facts in human nature. Nor can it well be denied that by the volitional attitudes we take up towards beliefs we prepare, or incapacitate, ourselves for the evidence of their truth. It may even have to be admitted, consequentially though reluctantly, that certain truths can only become visible to those who are willing to credit them in advance of any proof, by an act of faith. They verify themselves for one who will say, *credo ut intelligam*; but they do not *compel* assent.

Still the situation does not become really perplexing until we encounter cases where *either* of two incompatible views can claim, when adopted, that it is confirmed by subsequent experience. Yet such cases are not uncommon. For example, if a determinist interpretation be put upon the succession of events, no event will be found to refute this interpretation; yet the same set of events will equally conform to a libertarian explanation. A still clearer alternative of this kind is that between optimism and pessimism. Whichever of these one wills to believe, one can interpret all the facts into agreement with one's belief. In the one case the evil, in the other the good in life is declared to be 'only apparent'. That the real should be thus ambiguous, and obliging, and submissive to our interpretations, is surely a remarkable fact. It is, of course, conclusive testimony to the sound-

ness of the humanist contention as to the decisive *rôle* of human activity: but it raises difficult metaphysical questions as to what this submissiveness involves.

XVIII

We are thus finally reminded that though nothing is more disastrous to science than a premature intrusion of metaphysics, yet in the end we cannot escape from metaphysical problems, however little we may believe in their solutions. I have throughout this essay eschewed metaphysics, and been careful to describe Humanism as an attitude of the human spirit and as a method of solving the problems of human knowing, rather than as a metaphysical doctrine about reality as such: but I cannot altogether deny that it has metaphysical implications, and points to metaphysical consequences of considerable interest. In this essay they can, unfortunately, only be mentioned, and not explored.

In the first place it is implied in our whole account of the activity of knowing that it would be futile, if it met with no response from nature. If the real to be known were just hard unyielding fact that remained what it was, whatever we tried to do with it, not only our knowing, but *all* our activities would be paralysed. A certain *plasticity* of the real, whereby we are enabled to adapt it to our ends, is therefore a necessary postulate. How far this plasticity goes it is difficult to say, because only a few of the experiments conceivable have yet been tried; but we have a right to assume, for methodological reasons, that it is as complete as we desire. For if we assumed rigidity, we should only be debarring ourselves from discovering the possibilities of plasticity. Nor is our assumption so unreasonable in fact; for we saw in §XVII that in some respects the plasticity of the real actually goes further than is convenient.

Secondly, a certain *pluralism* is pretty definitely implied in Humanism. For, in protesting against the intellectualist abstractions from the human aspects of knowing, it recognizes each man as a real centre of activities, and *ipso facto* declares illusory the 'simplification' which treats all men as one and neglects their differences. Thus the empirical plurality of beings is not slurred over, but recognized as of right. This does not necessarily mean that the way to every sort of monism is barred; but it does mean that monism will have to be honestly arrived at, and not simply presumed, with a perfunctory parade of unsound arguments.

Lastly, the pluralism implicit in any refusal to abstract from personality naturally tends to *individualism*. But so do all metaphysics, rightly understood. Not only are they, historically speaking, highly individual products

of exceptional minds, but their individuality is manifestly derivable from the very function of metaphysics. The proper function of metaphysics is to effect a final synthesis of all the *data*, provided by all the sciences, and relevant to the final question about reality—*What does it all mean?* Admittedly, therefore, it must take into account all the data and undo the abstractions, rightly practised for their special purposes by all the other sciences. Conspicuous among these abstractions, however, is that from personality; it is generally practised by the sciences, and with success. But this only renders it more urgent that personality should come to its own in metaphysics, where it is no longer legitimate or possible to exclude it. Now this is precisely what we find to be the case: the personality of the metaphysician is found to supply the principle which evaluates the data of the sciences (as known to him), and arranges them in a system that brings the world nearer to his heart's desire. But the very reason that renders his metaphysic satisfactory to him, viz., the part played in it by his own personality, is bound to render it more or less unpalatable to others, who find that *their* idiosyncrasies have *not* been satisfied. Hence metaphysics seem doomed to remain *personal guesses* at ultimate reality, and to remain inferior in objective value to the sciences, which are essentially 'common' *methods* for dealing with phenomena. Nevertheless Humanism, though it cannot forget that it is itself a method, will regard the efforts of metaphysicians with tolerance and interest, and will not deny them at least aesthetic value, where their constructions show artistic merit.

NOTES

1. Mr. F. H. Bradley is emphatic that he has not. Cf. *Principles of Logic*, 2nd ed., pp. 534, 621.
2. Bradley, op. cit. pp. 618, 619.
3. Cf. Bradley, op cit., p. 601.
4. Cf. "Axioms as Postulates" in *Personal Idealism*, especially §8-27.
5. Cf. Dr. Singer's *Studies in the History and Methods of Science*, p. 235 f., vol. i.
6. Unfortunately I have not the space to show this here.
7. Cf. articles on "Arguing in a Circle" in *Aristotelian Soc. Proc.*, 1921–2, and on "An Idealist in Extremis" in *Mind*, April 1922.
8. Cf. *Studies in Humanism*, ch. ii, and *Plato or Protagoras?*, Oxford (Blackwell).

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7

THEORY AND PRACTICE

I cannot begin to consider the subject of my Address to-day without a word of preface to express my gratification at having been chosen, after many years, to deliver a Lecture which commemorates my old friend, George Holmes Howison.[1] I knew him only in his later years, when he came repeatedly to spend a great part of several sabbatical years in Oxford; but I soon learnt to admire his devotion to philosophy and to respect a personality which seemed to be cast in the old Roman mould. And I think you have done well to cherish his memory on that Pacific Coast where he did so much to lay foundations for the study of philosophy, so deeply and so firmly that his successors can build upon them to this day.

My aim on this occasion will be to explore the implications of the familiar antithesis between Theory and Practice and to examine how it arose and how far it is valid; how far, that is, it should be allowed to direct our thinking.

Must Philosophers Disagree? And Other Essays in Popular Philosophy (London and New York: Macmillan, 1934), pp. 164–181.

§1

In philosophic history the origination of our antithesis must, on the whole, be credited, or debited, to Aristotle. Aristotle, for reasons better known to himself than to us, but not perhaps unconnected with experiences in tutoring Alexander the Great, appears to have convinced himself that he was not cut out to be a king, but ideally fitted to be a professor; so he utterly repudiated Plato's gorgeous paradox that the philosopher must be the ruler if the world is to be well governed. Now this was just like Aristotle. Aristotle did not share Plato's taste for sweeping 'synoptic' views that lost themselves in the panorama of all time and all existence, and fused distinctions in a blaze of unity; so he very naturally disallowed Plato's identification of the philosopher, the good man, and the good ruler. To Plato it had seemed self-evident that the philosopher who had apprehended the Idea of the Good, the supreme cosmic principle, and so was cognizant of ultimate reality, must, in virtue of this illumination, become also the perfect man and the skilled ruler: he had therefore promoted him to the highest rank, alike in the State and in the cosmos. The philosopher was to be a King, inspired unswervingly by a constant vision of eternity, who ordered all mundane affairs with a single eye to the all-inclusive truth about the ultimate reality which was also the highest value, the aim of all purposive endeavour, and the end of ends which fixed the place of everything in the intelligible world of Being which transcended all Becoming. So there was not for Plato any dualism or dissension in the perfect life or in its perfect object. The philosopher was, by definition, the spectator of all time and all existence: and, by virtue of his knowledge, he was possessed also of all the moral virtues, and fit to guide and govern all mankind. There was thus no room in the Platonic scheme for any antithesis between theory and practice as regards the conduct of life, even though metaphysically this scheme rested on a deep dualism between the sensible and the intelligible.[2]

But Aristotle proceeded to upset this sublime synthesis. Whether it was that he was too much of a professor to cherish such regal ambitions, or that he sincerely thought that the Platonic vision of a perfect society ruled by perfect wisdom had overlooked essential differences in the constitution of the cosmos, he proceeded to draw the line between the superior and the inferior portions both of the universe and of the human soul quite differently. Whereas to Plato the whole visible world had been regarded as tainted, to Aristotle it was only the sublunary world that was debarred from perfection by the inferiority of its 'matter'. The 'first heaven', that is the outer sphere of the fixed stars, was capable of an eternal, unchanging, and circular motion which was directly inspired by the Aristotelian deity, the Prime Mover himself. And man, as a denizen of a sublunary world, was so

far from being the best being in the universe that his good could not be simply identified with the good of the whole or even of its most valuable parts.[3] Man could no doubt rise at times to the contemplation of the eternal and immutable, and find therein his highest happiness; but in these lofty regions he could not sustain himself, and it was only fitfully that he could lead the 'theoretic' life of pure unadulterated contemplation. Most of his life and most of his faculties were relative to, and absorbed in, terrestrial affairs which were essentially 'contingent', variable, temporal, and impermanent.

So Aristotle imported a dualistic distinction of kind also into the human soul, into the human reason, and, ultimately, into human life. Whereas for Plato the philosophic or cognitive faculty had been all one, it was now subdivided into a *scientific* part[4] which was concerned only with immutable and necessary objects and the 'theoria', which contemplated them, and a *calculative* part[5] which was capable of coping with the variations and relations of 'contingent' matter, and all the affairs of action and production. This duality in the soul was deduced from the duality in the universe by the teleological consideration that to objects different in kind faculties differing in kind must correspond.[6]

Thus Aristotle's cosmology demanded a discrimination between the sage and the practical thinker, the *phronimos*.[7] The latter was indeed admonished to respect the superior dignity which the former derived from his converse with the immutable and necessary, but there were assigned to him the whole management of affairs and the entire sphere of politics. Aristotle might hope and feel sure that he would recognize the superior merit of the sage's contemplations; but he put the sage completely in his power, so that he could make his social status whatever he willed. And it is difficult to share Aristotle's confidence that the man of affairs would have given the sage the position Aristotle demanded for him. Aristotle had stripped him of the political functions and powers Plato had lavished on him, and had expressly denied that his activities had any social value or contributed to the good for man. "Theoretic wisdom," he declared, "will not contemplate anything whereby man may become happy."[8]

Why, then, should the practical man cherish the sage, tolerate him, or even support him? The only reason that can plausibly be suggested for exalting the sage is not practical but aesthetic. If only a city could be made to feel that the sage represented human nature in its highest developments and to admire them aesthetically, or could flatter itself that it could afford to support eccentrics like Thales, Socrates, and Diogenes, it might be willing to condone their practical uselessness; it might even endow them with professorships of useless knowledge, in token of its own magnificence. Even so it might store up beautiful though useless works of art in its

museums. Now Aristotle does not explicitly defend useless knowledge and use less beauty in this way, but it seems the only way of justifying the sage and his doings from a social point of view. If the votary of pure contemplation refuses to fill up the gap in Aristotle's doctrine in the suggested manner, he must at any rate recognize an unsolved problem here.

Before leaving Aristotle's conception of the antithesis between Theory and Practice we should note also how narrowly it restricted the sphere of scientific knowledge. Scientific knowledge was concerned with 'necessary matter' alone, that is, with mathematics and the objects of 'first philosophy', a few first principles of a metaphysical sort, which Aristotle assumed to be intuitively and infallibly apprehended by *Nous*. A third class of demonstrable objects is indeed sometimes added, in the *Forms*, the eternal and incorruptible universals embodied in the perishable phenomena of Aristotle's static world. But Aristotle was careful to point out that in the sublunary world, the 'form' was always liable to be thwarted by the 'matter'; hence rules might be baffled by exceptions, and phenomena could never be completely trusted to behave according to our expectation or their plan.

The Aristotelian system thus confronts us with a curious duality of aspect. Taken at its face-value, it professes to exalt contemplation above action, theory above practice, and the sage above the practical statesman. But, on its own showing, this supremacy is deceptive and quite illusory. For throughout the whole world of contingent matter, that is, for the whole sphere of modern science (with the possible exception of pure mathematics), the highest authority is the practical man, who is *not* concerned with necessary demonstration, but is allowed to reason about contingencies, probabilities, and general[9] truths. He it is that regulates also the pursuit of pure truth and the social status of the sage.

Moreover, he is conceived in an essentially, and even excessively, pragmatic manner. His knowledge, for example, is the fruit, not of speculation, but of action. He acquires his insight, his 'eye', from practical experience, and *thinks* right because he has *done* right habitually. Aristotle's whole doctrine of moral training, issuing in assured virtue or incorrigible vice, is intelligible only if we allow for the power of repeated action to mould belief. As regards thought about things to be done, then, and by implication about all things variable, the supremacy of practice over theory is incontestable.

Nay, more, definite errors may be detected in Aristotle's valuation of the objects of 'theory'. When he asserts[10] that the white and the straight are absolute, and not relative to the human good and the human organism, like the healthy and the good, it becomes necessary to point out that he is definitely wrong. For the *white* is certainly relative to the sunlight of the little planet on which our organs of vision have been evolved in a severe

struggle for existence, and so must be regarded as conditioned biologically, while the *straight* is assuredly relative to the (Euclidean) geometry which we have adopted as most convenient, and preferred to the other geometries which the human mind has also excogitated.

It must further be observed that though Aristotle can hardly have been aware of it, the superior dignity of the supralunary heavenly bodies which disposed him to believe them perfect, immutable, and incorruptible, was not merely an error of observation, not finally confuted till 1572, when Tycho de Brahe observed a new star of the first magnitude in the constellation of Cassiopeia, but manifestly a survival of a prehistoric astronomical religion.[11]

Finally, the Greeks' preference for 'pure' science, and their aristocratic contempt for applications that involved manual manipulation, were intimately bound up with their conception of *banausia*, which rendered the use of his hands for anything but fighting unworthy of a gentleman. Thus it is not too much to say that Aristotle's valuation of contemplation had its roots in error, snobbishness, and superstition, and should no more hold valid for us than the medieval interpretation which identified it with the monastic life.

§2

But after all outside Oxford Aristotle is no longer considered infallible, and we may take the liberty of correcting his mistakes. Let us proceed, therefore, to inquire how *in fact* theoretic inquiry arose among men and differentiated itself from practice. This inquiry is usually scamped. A mere assertion that *curiosity* is the source of science, or even a perfunctory reference to Aristotle's dictum that philosophy begins in wonder,[12] suffices to dispose of it. At best this last assertion is qualified and brought a little nearer to life by quoting Schopenhauer's caustic addition that the wonder which excites philosophy is aroused by pain and disappointment. But usually curiosity is treated as a final term of scientific analysis, and not investigated further.

Yet is not this unwarrantable and absurd? Must not curiosity be regarded as a biological endowment, like any other? Like any other human or animal quality, is it not subject to natural selection and relative to modes of living and surviving? Must it not be possible to explain in biological terms why some organisms have developed it and others not, and to say what part it plays in their life?

Let us inquire, therefore, into the claims of curiosity to have given birth to science. And, to begin with, let us enumerate the creatures who are distinguished by their possession of this quality in a marked degree. They

would appear to be busy-bodies, gossips, monkeys, mongooses, squirrels, and penguins. Not a very distinguished list for the scientist or the philosopher to incorporate into his pedigree, one might think.[13] The curiosity shown by these creatures seems to be a little lacking in the high seriousness and tenacity of purpose which are thought to distinguish the devotees of pure science. Though related, doubtless, to their modes of life, and rendered possible and proper thereby, it would seem to be connected rather with the more sportive and trivial aspects of their life. If I were advocating the claims of 'pure' science, I should not be eager to affiliate my claims to respect to the curiosity of penguins, squirrels, mongooses, monkeys, gossips, and busy-bodies! *Non tali auxilio, non defensoribus istis!* I should try to discover another and more reputable pedigree for my pursuits.

§3

Nor, perhaps, would this prove difficult. We should begin by observing that, so far as we know, man is the only creature on earth in whose behaviour the antithesis between Theory and Practice can be recognized. It is a distinction peculiar to man, in a way in which those between Work and Play, between Reality and Make-believe are not. Now this is a matter of some significance and importance. For if these latter distinctions were sufficient to characterize man, the puppy dog and the kitten would be formidable rivals to the philosopher, while the beaver and the ant would put him to shame, and he might even be in serious danger of being classified with the drone.

But even in man the distinction between Theory and Practice does not appear to have been an original factor in his behaviour. As we have seen, it does not appear in the history of philosophy until Aristotle, and in fact it seems to have been evolved at a definite point in man's history, when, fired with the ambition of mastering the earth, he abandoned his peaceful life in the tree-tops, and his vegetarian browsing upon shoots and fruits, and descended to do battle with the great beasts of the forests and the prairies, thereby transforming himself, by the earliest and most authentic case of lycanthropy on record, into a *were-wolf* or carnivorous *wolf-ape*, *Lycopithecus venaticus*.[14]

Now when our ancestors became hunters they had to change a good many other habits besides their diet. They had, for example, to learn to live together in a pack, and to distribute the spoils of the chase equitably, and so that the whole horde could feed on them and survive. This, according to Carveth Read, was the beginning of social life. There were, moreover, other, quite as momentous, changes. One of the first lessons a hunter has to learn

is to stalk his game. And to stalk successfully, he has to observe closely, accurately, and patiently, and to act intelligently, craftily, and promptly.

How keen was the observation of primitive man the specimens of his earliest art, the cave-paintings in his palaeolithic abodes, still survive to attest. We can there see that he depicted, e.g., galloping horses more correctly than all later artists, who painted them *ventre à terre*, floating in the air with all four feet simultaneously off the ground, in what is really an impossible posture. No doubt his accuracy of observation conduced to more and other things than the effectiveness of his food-magic; but he got no credit for it from his descendants, until many ages later, when photography vindicated the superiority of his perceptions.

Nor was it only his first lesson in scientific observation that man derived from his adoption of hunting as his livelihood; he learnt from it also his first lesson in moral self-control. For the hunter must learn to abate his eagerness, to inhibit his impulses, to steady his nerves, to control his every act, motion, and emotion, so as not to scare his game nor to defeat his purpose.

Must we not say, then, that all the psychological conditions of successful theorizing are already demanded of the successful hunter? Can we doubt that this was where, when, and how the human mind grew the intellectual qualities subsequently required for the successful pursuit of scientific *investigation*, which, we may remind ourselves at this point, originally meant nothing more than tracking a trail?

Clearly, then, history shows that the capacity to 'theorize' or 'contemplate', that is, to delay action and to watch, was a useful one to develop at a definite stage in man's evolution. Historically Theory springs from Practice and can be definitely traced to special adaptations to the conditions of life. So I cannot but think that philosophic man makes a great mistake when he imagines that as a ruminator he can rival the cow and as a contemplator the cat. The cow has to ruminate for her living, and the cat learnt her contemplation for ages, *watching mouse-holes*, while man was still running about the country in pursuit of the swift-footed deer.

It would seem to follow that the traditional derivations of scientific theory from random, disinterested, otiose curiosity, and aimless philosophic wonder, are mythology and superstition, to which the authentic history of life lends little support. The world has never been one that would tolerate such a way of life. The animal that wandered about it, just wondering or devoured by curiosity, would speedily have been devoured by something more substantial and insistent.

Nor are the traditional, stock examples of theoretic knowledge and pure contemplation much more convincing than these myths. To the Greeks, and particularly Aristotle (as we have seen), the sciences of

astronomy and geometry formed the best examples of pure *theoria*. But this valuation was really a relic of a primitive religion, of which the utilitarian function had been forgotten. It was a relic of star-worship, and star-worship had been instituted when the pursuits of the hunter became secondary to those of the nomad and the agriculturist. For it then became desirable, nay necessary, to determine the length of the year with considerable accuracy, in order that herdsmen might know when spring was coming to their pastures, and farmers when to expect seed-time and harvest. The length of the year, however, could be determined only by continuous astronomical observation, over long periods, of the relative motions of the sun and certain conspicuous stars over selected landmarks; and how could such continuous observation be ensured in the absence of written records? The problem was solved by the deification and worship of the heavenly bodies, conducted in temple-observatories by castes of hereditary astronomer-priests, who could thus transmit the records of their observations from father to son, from generation to generation.[15]

The practical origin of science is even more apparent in the case of geometry. For geometry still has stamped upon its very name its generation from the social need of measuring fields in the annually inundated river-valleys of the Euphrates and the Nile.

Thus the superior dignity of pure science, which Greek theory so profusely recognized, was in fact a superstitious survival, a by-product of an utilitarian cult of heavenly bodies in an astronomical religion, and derived from the practical use of mensuration. Plainly the 'pure' sciences are no aerophytes, but are deeply rooted in human needs.

§4

Nor are the champions of pure science much more successful in analysing the *psychological* basis of the mental attitude they commend and prescribe. The psychological stimulus to the pursuit of pure science is usually described as a disinterested love of knowledge for its own sake; but, as described, this is nothing but a tissue of contradictions. A love of knowledge surely is psychologically an *interest*, which may be found or fostered in certain minds, and exploited in certain societies. For in advanced societies it can be utilized for sundry social purposes. It would be, for example, an excellent passion to implant into the souls of the idle rich; and it may possibly conduce to the making of a good professor, though this is far less certain. In any case, 'disinterested' seems a needlessly paradoxical and singularly inappropriate term to use. For, even though in one sense all love is disinterested, in that it is directed upon the good of the object beloved

rather than aimed at some selfish aggrandisement of the lover, yet psychologically the love is an interest in the lover who feels it, and values it, and who would grow cold and indifferent if he lost his interest.

When, therefore, the love of scientific investigation is described as 'disinterested', the description is clearly one from the standpoint of an observer who does not himself feel and share this interest: it does not, and indeed cannot, describe the feeling of the investigator himself. Yet this latter is surely more truly descriptive of the essence of research than that of the cold and distant observer.

Furthermore, it is often overlooked that no attempt is ever made to prove the contention that the 'disinterested' feeling just discussed is peculiarly characteristic of those who devote themselves to the progress of knowledge, and that it is invariably, or specially, conducive to this progress. It may be taken as probable enough that a goodly percentage of those who cultivate the sciences will be actuated by this feeling more or less, though the psychological inquiries which would establish this have yet to be made. But if it be a fact, it will be so largely because academic life naturally attracts those whose idiosyncrasy is not repelled from a career which, even in our most civilized societies, offers little to those who have greater, or ignobler, ambitions.

§5

However, it would be quite a mistake to infer from this situation that those who are blessed, or cursed, by nature with the temperament of the pure researcher are to be at once hailed as higher beings and allowed forthwith to indulge in their genius and their propensities. We should first inquire whether they can safely be let loose on society and permitted to research into whatever may come into their heads. For we may not assume that such a policy of unguided research will not prove to be misguided, and will adequately safeguard social interests and uses. It cannot even be assumed that it will do justice to the intrinsic importance and relative values of the subjects to be studied. For it unfortunately appears to be part of the psychology of learned men that they are often somewhat wayward in their tastes: so what seems most important in their eyes is apt to seem trivial in the eyes of others, and turns out to be sterile in the light of subsequent developments. Thus to give an absolutely free hand to the learned may be quite a bad way to promote learning, as well as socially deleterious.

At Oxford this possibility used to be illustrated by an anecdote told about Benjamin Jowett, the famous Master of Balliol, and Robinson Ellis, the Latinist. The former had been the latter's tutor, and used periodically to

inquire into what he was doing with his leisure as a young Fellow of Trinity. On one of these occasions Ellis had explained that he had been researching into the glosses on the scholia in the text of Ammianus Marcellinus, a late Latin historian of the fifth century A.D. "I cannot understand, Mr. Ellis," remarked Jowett, "why you always seem to interest yourself in the obscurest aspects of the most unimportant authors!" Like Dean Gaisford of Christ Church, who often recommended his young men to cultivate the art of writing Greek and Latin verses as "an elegant accomplishment which not infrequently leads to posts of considerable emolument in the church," Jowett was a natural pragmatist, who was always trying to bridge the gulf between the scholar and the man of action, and to incite the universities to regard the education of the leaders of the people as one of their essential functions.

But it seems doubtful whether in this case his rebuke to Ellis was appropriate, and whether he understood as well as the latter the world in which both lived. For the academic world loves to segregate itself, and to put itself into opposition to the larger world around it. The qualities which it cherishes and admires, and consequently renders useful in it, are often highly antithetical to those so regarded elsewhere. It delights to honour attainments which elsewhere are despised, and exalts to the highest posts professors of examinable nonsense and of a useless 'learning' which has as little to do as possible with the serious affairs of life. It was by dint of a life-long devotion to such learning that Robinson Ellis became a prince of pedants and a member of the British Academy, and died full of years and honours as Corpus Professor of Latin in the University of Oxford.

In view of such careers I shrink from over-hasty judgments, and will leave you to decide whether a common type of academicism represents devotion to pure theory or sharp practice! At any rate respect for scholarship passes easily into subservience to pedantry. So pedantry *pays* superbly in academic life, which finds profitable uses for quite a number of things which are not useful elsewhere. From a national standpoint, therefore, it is socially necessary to evolve checks on pedantry and to institute a certain social control of academic activities, though it is difficult to hit the golden mean in this respect. It may well be that there is a little too much of such control in this country; but there is certainly too little in Europe.

§6

However this may be, and whatever estimation we may adopt of pedantry, an important theoretic question is left unsolved by the conventional theory of 'pure' science. How is the 'pure' scientist to determine in what direction

he is to push his researches? He finds himself surrounded by an infinity of theoretic problems lying in every conceivable direction. Some of these seem to connect with practical problems and to promise valuable results, others not. Some seem to bear directly on practical problems, others remotely. Being limited both in time and in resources, he cannot pursue all these clues. He has to choose. But how? The pragmatist has his answer ready. Let him choose, not the problem which appeals most seductively to his own foibles, but rather that which seems to him important, and likely to be most fruitful of results, and take the consequences. But if there is to be *no* subordination whatever of theory to practice, this answer is plainly inadmissible. Believers, therefore, in the self-sufficiency of pure theory are in duty bound to provide another answer. Until it is forthcoming, it will be safe to declare that the antithesis between Theory and Practice is ultimately false, and that Theory neither should, nor can, be entirely divorced from Practice, even in a university!

§7

Indeed it is in a university that academic men should be most scrupulous to guard against the bias of their nature. They should endeavour, not to exalt and exaggerate the academic life out of all reason, but to fit it into its appropriate niche in the whole of life, and to correlate it harmoniously with man's other activities.

It is to be hoped that they will not allow themselves to be distracted from this noble endeavour by the stale old plea that our whole procedure has argued fallaciously from origin to validity, and that even though Theory was generated from Practice it has now grown up, and emancipated itself from the parental discipline. For while it is untrue that the way in which a thing originates decides its *value* once for all, and insures it, absolutely and for all time, against the chances and changes of our mortal being, it is fully as untrue that it can emancipate itself from all the conditions that gave rise to it, and can repudiate its past entirely. For everything is what it is in virtue of what it *has been* through. This does not condemn it to remain what it was; for much can be outgrown, though how much no one can predict; but that some historical condition *has been* outgrown in fact requires always to be shown in detail. Moreover, it has always to be remembered that all the changes and developments that occur take place in accordance with the biological laws that pervade all living nature. It is not possible, therefore, that Theory should revolt against Practice, and declare itself independent. If it tries to do so, it will be reduced again to subjection or eliminated, by natural selection.[16]

Least of all can such an unnatural defiance be assumed simply on the strength of the verbal antithesis between Theory and Practice. Ever since Aristotle's attempt to justify the notion of pure theory broke down, its later advocates have made no serious attempt to define its relations to practice, still less to re-define it in the light of the theory of natural selection.[17] They have investigated neither the relations between pure science and applied, nor the relation between the interest in 'pure' science and other psychological interests. They have merely ignored the problems concerning the social status of pure science and its social utilization, guidance, and regulation.

Above all they have made no attempt to overcome the annoying dualism between Theory and Practice, and to rise to a unitary view of human nature. It is often asserted in words that it is the aim of philosophy to unify: if we are in earnest with this aim, is not the antithesis of Theory and Practice one of the first dualisms we should endeavour to transcend?

§8

As a sort of epilogue to this Lecture, I cannot forbear to quote a delicious illustration of what 'theory' means in practice, which I owe to my friend Mr. J. W. T. Mason, who obtained it from Professor Hu Shih, of the National University at Peiping, and China's leading philosopher.[18] It would appear that some two thousand years ago a contemplative Chinese sage in the course of editing an ancient Classic interpolated into it a dictum that *knowledge is easy; but action is difficult*. He was taken at his word, and for two thousand years it was *de rigueur* in China (as in Europe) to believe that the 'easier' course was also the nobler and higher.

Then came Sun Yat Sen, who declared, on the contrary, *that knowledge is difficult, but action is easy*, and gaily plunged China into revolution. After a generation or so of chaos, philosophic minds reflected that this maxim also did not seem to work, and that therefore its truth might be questioned. So Hu Shih pragmatically ventured to amend the dictum of Sun Yat Sen, which had become the shibboleth of the Kuo Min Tang party that dominated China. He said *knowledge is difficult; but action also is not easy*. Thereupon he at once became suspect as a counter-revolutionary disloyal to the Founder of the Republic, and very nearly lost his job and had to flee from the wrath of the Nanking government! He is now safe, however, Mr. Mason assures me, largely because the loss of Manchuria has inclined the Kuo Min Tang to rather greater liberality and toleration.

This instructive anecdote reveals how rash it may be to take 'purely theoretic' dicta at their face-value in the abstract, without regard to the human context in which they operate. This indeed is the lesson of history

throughout. Theological disputes, notoriously, have not really been about the details of rival formulas, and *There is one God and Mohammed is his Prophet* was never in fact the theoretic proposition it is in form. It behoves us, therefore, to remember that scientific and philosophic propositions are no different. In a proposition about evolution there lurks a reference to an enormous multitude of facts and interpretations, in one about 'atoms' a reference to a vast number of experimental observations and 'pointer-readings', which even the acutest 'reflecter' cannot observe without leaving his chair. Similarly the differences between rival metaphysics are never *merely* 'theoretic': they are rooted in the diverging temperaments and discrepant idiosyncrasies of their authors and they require different ways of living. Would it not be well, therefore, to convey some inkling of these facts to the student before setting him to 'understand' these theories?

§9

For myself I feel justified in concluding that the whole antithesis between Theory and Practice is thoroughly false and misleading. It is false that there is such a thing as 'pure theory' which has no bearing upon practice. Even if theory is made so 'pure' as to become inapplicable altogether and thereby meaningless,[19] it will at least have the practical effect of alienating from reality the mind that entertains itself by playing with it. For even the stupidest and most unteachable theorizer will eliminate himself, if he acts on theories that run counter to experience. It is false, further, that the practical bearing of a theory has no effect upon its claim to 'truth'. In the (extreme) case just mentioned the theory extinguishes itself by eliminating its holders. But few are quite unteachable, and so when a theory works very badly, it tends to be gradually abandoned: if it is signally successful, it finds more believers. Hence it is false also that the 'working' of a theory makes no difference to its truth-claim. Normally practice has great and important effects upon theory. It is true that in the traditional histories of the growth of knowledge the services of practice in testing, confirming, and developing theories, are slurred over or ignored. But then these histories are romances, and not even beautiful romances at that. I sincerely hope that some day they may be superseded by something more authentic, and that some of you may live to see the day when the young are allowed to learn that there is no natural antagonism between knowing and doing, between theory and practice, and that all human activities both can and should co-operate for the continuous improvement and enrichment of human life.

NOTES

1. Howison Lecture, delivered at the University of California, Berkeley, in January 1933. It was not published in the usual manner because, owing to the depression, the University could obtain no grant for printing from the Legislature. The ultimate dependence of 'theory' on 'practice' thus receives a pretty illustration!

2. Cp. *Humanism*, p. 23 f.

3. *Eth. Nic.* vi. 7. 3-4.

4. *ἐπιστημονικόν*, true science being restricted by Aristotle to necessary deductions from self-evident principles.

5. *λογιστικόν*, deliberation about alternatives being characteristic of all practical affairs, whether of moral action or of production.

6. *Eth. Nic.* vi., 1-5.

7. The term *phronesis* is usually translated 'practical wisdom', but it is important to bear in mind that it originally meant *thought*, and that the Aristotelian sense is merely a development of a Socratic use. When Socrates insisted on the need for *thought* about social affairs and declared that 'virtue' (excellence) was 'knowledge', he meant to substitute ethical reflexion for customary taboos; when Aristotle selected *phronesis* as his special word for thought about contingent matter (including all human affairs) he was so far merely endorsing Socratic intellectualism. But he soon discovered also the intimate relations between action and belief, and in consequence *phronesis* becomes a fruit of experience, and takes on a highly pragmatic colouring. The man who has 'thought' about actions and knows how to do the right thing (*ὀρθόν*) has gained knowledge of the Mean, and so of Virtue; but he has gained this knowledge by practising virtuous actions and acquiring virtuous habits, in a moral society wisely ordered, before his time, by the practical wisdom of his predecessors. Thus every individual's moral insight and practical wisdom arise out of repeated virtuous actions, done at first from deference to social requirements: in other words, in moral matters, practice is prior to theory, and generates it. For the bad man, similarly, becomes incorrigible and incapable of *understanding* goodness by persisting in evil doing. *Eth. Nic*. vi, 5. 6.

8. *Eth. Nic.* vi, 12. 1.

9. *ὡς ἐπὶ τὸ πολύ*.

10. *Eth. Nic.* vi. 7. 4.

11. See further, p. 174.

12. *Metaphysics*, A 1.

13. More creditable, however, than the ingenious suggestion Dr. H. M. Kallen makes in his interesting paper in the *Journal of Philosophy* (xxix, 596), that the high valuation put upon 'idle' curiosity is ultimately to be traced to snobbish imitation of the 'idle rich'.

14. This important chapter of human pre-history has been recovered for us by the ingenuity of the late Professor Carveth Read in his *Origin of Man* (1925).

15. This explanation of the early cultivation of astronomy is more probable than the theory that the ways of the stars were studied to enable men to find their way about at night. Primitive man was much too afraid of wild beasts and ghosts to roam about at night.

16. Sooner or later, though the process may take an appreciable time in the case of an otherwise strong and viable society which sets itself to defy biological law.

17. Thus no intellectualist has, to my knowledge, attempted to explore the intricate relations between truth and survival-value. Cp. *Problems of Belief*, chap. xii.

18. He contributed also an excellent Essay on the Civilization of the East and the West to Dr. C. A. Beard's *Whither Mankind?* (1928).

19. As in the cases of Formal Logic and Kant's categorical imperative in ethics.

Part Two

FIRST PHILOSOPHY

Metaphysics and Values

INTRODUCTION TO PART TWO

Hugh McDonald

Schiller wrote at the end of the nineteenth and the beginning of the twentieth century. The dominant philosophy in both Britain and America at that time was idealism in various forms. The British Hegelian movement was at its peak, but it was not alone. There were also idealists who were part of the "back to Kant" movement, the Neo-Kantians. The influence of Rudolf Hermann Lotze was at its zenith just as Schiller was completing his higher education. Finally, the personalist movement was beginning. All of these currents of thought had some influence on the young Schiller.

Schiller may be said to have reacted against the British Hegelians, especially F. H. Bradley, who was Schiller's particular *bête noir*. He was also largely critical of Kantianism (*Humanism*, 2). However, the influence of Lotze was very strong on Schiller, and he never entirely abandoned this form of idealism in his later, mature period. He also embraced the personalism movement as his own (see previous section). Lotze's form of idealism was "teleological," involving two distinctive traits. One was the introduction of the question of meaning and purpose in a mechanical universe. The other Lotzean innovation is the priority of the good over being, that is, as Lotze put it, "that which should be [is] the ground of that which is." The normative "should" is the basis for reality since it provides meaning and direction for the otherwise meaningless mechanical forces in the world.

Schiller incorporated this view into his pragmatic Humanism, which gave it a flavor distinct from the other pragmatists. This normative standard is the goal of historical action in shaping the world. Schiller thought that philosophy should be concerned with the problems of life and life is basis of value. Thus philosophy in general concerns value issues at the root.

Specifically, Schiller makes ethics his "first philosophy," a place traditionally accorded to metaphysics. Thus he argued for "The Ethical Basis of Metaphysics."[1] "First philosophy" is the basis of a system of philosophy. The influence of Lotze is clear here: ethics, which since Kant has had the normative, the "should" as its domain, is the basis for metaphysics, or what "is" (reality as it is). This is a historical reversal of the roles of ethics and metaphysics. From the time of Aristotle, metaphysics has been viewed as the basis for other branches of philosophy, including ethics, as "first philosophy." Schiller reversed the relation, anticipating later thinkers like Levinas. Ethics, which Schiller, like the other pragmatists, views as teleological or consequential, provides the goals by which reality is "remade"[2] and thereby given meaning.

Schiller also advanced metaphysical views, however. Although metaphysics is ultimately based in ethics, reality can be characterized in terms of change. In his view reality is in flux: like Dewey he was an acute critic of the ancient Greek view that "being" is the ultimate reality. For Schiller, change and process characterize reality, a view he retained throughout his life.[3] In this respect, Schiller was in accord with James and Dewey. Indeed, in his early period, he thought that the reality of change was a challenge to formation of any principles of science. The connection with first philosophy is that humans can analyze these processes, copy them, and alter reality in accord with various human purposes. These purposes also color how reality is perceived or known: Schiller anticipated the "social constitution" or "social constructivism" view by decades. But he went beyond social constructivism, since he realized that reality is "incomplete" and that its complete determination required human making as part of the world. The world is changing in part because of practical human projects. Since reality thereby reflects value, the real and unreal can, like other normative antipodes—true-false, beautiful-ugly, and good-bad—be considered values.

Another influence was that of Darwinian evolution. Schiller named an early essay "The Metaphysics of Evolution."[4] Processes are historical, including the rise of life and the ascent of humans. Metaphysics, the study of reality, cannot, therefore, ignore time, the historical dimension. In this incorporation of history and biology was the beginning of the break with the modern philosophy of the subject, originating with Descartes. Moreover, Darwin's work seemed to give the notion of progress a scientific

basis, since higher life forms evolved from lower. Schiller was a consistent evolutionist who believed that the perfection of the world included the perfection of humans, the basis for eugenics (see part four). Finally, Schiller thought that Darwinism was a decisive argument for nominalism, since species emerged from one another, were not permanent, and therefore undermined the reality of universals.

Schiller attempted to combine the two strains in his philosophy, that is, the teleological idealism of Lotze with evolution. Evolution is aiming at a perfect harmony, a perfection of all reality. Reality tends toward the realization of this ideal, the harmony of all spirits (*Riddles of the Sphinx*, "Conclusion"). Progress in history is moving toward this ideal of perfection and harmony, the purpose or meaning of the universe that is immanent in history. Thus despite his differences with the Absolutism of the British Hegelians, Schiller shares with some Hegelians the incorporation of history into his metaphysics.

Schiller shared certain other, broad principles with his fellow pragmatists, besides the metaphysics of process. One is the emphasis on consequences that connects the various strains of pragmatism. Peirce described pragmatism in terms of meaning: that the meaning of concepts or ideas consists in their total conceivable practical consequences. James defined truth in terms of consequences. Consequentialism ties in neatly to a teleological view of the world, since the consequences in practice are at the same time the end or goal. Schiller defended teleology as a principle from the beginning of his career to the end, despite the attacks on it by mechanists and materialists. For the world to have meaning requires that it have an end or ultimate goal. Humans have a part in reaching this goal, the making or creation of reality, and perhaps a favored place in it. Another principle he shares with the other pragmatists is pluralism, the idea that reality consists of irreducibly different kinds.[5] Pluralism contrasts with both monism, that reality is uniformly spiritual or material—and dualism, that all of reality can be reduced to two kinds, generally mind and matter. He shared this anti-reductionist stance, which denies that the incredible variety of different kinds in the world can be reduced to one type, with the other pragmatists.

Peirce's position, "objective idealism" was that matter is "effete mind." Schiller is also in the idealist wing of pragmatism, since he would agree with Piece that the lower cannot explain the higher,[6] that is, that matter cannot explain mind. Moreover, the ideal of Humanism is "to show how all things are of like nature with the mind." Dewey was a naturalist, but Schiller's humanism is the view that humans have largely risen above nature, or emerged out of nature.

However, Schiller's idealism is less transcendent and more nominalistic than that of Peirce. Schiller outlined an emergent spiritualism in his early

period, as in Peirce, but ideals are immanent mainly as goals or teleological components by which reality is remade. Schiller's Humanism is also an attempt to go beyond the subjective-objective distinction implied within Peirce's view. The reality shaped by human purposes is the only reality, and cannot be detached from this humanistic element. Thus it is neither subjective nor objective, contrary to his critics. "Objective" reality is the reality reshaped by "subjective" activity as a goal. The result is objects shaped by subjects, which combine elements of both. Schiller argued, like Dewey, that the subject-object dichotomy had been superceded by pragmatism.

The connection of ethics with metaphysics is that reality is both "plastic" and "incomplete," or in other words that reality can be remade in interaction. Human goals alter reality with actions aiming at valued consequences. In this incorporation of human action and value into shaping reality, Schiller completed the pragmatic break with Cartesianism. Reality affects human history and development, but humans also shape reality, and by completing, give it meaning and purpose. Moreover, each person's philosophy has its own unique metaphysics,[7] and individuals put their personal imprint upon the making of an incomplete world. Schiller's view expresses the inner spirit of pragmatism, in ending the dualistic view of humans alienated from a mechanical universe. Rather, the universe has evolved creatures that can interact in practice and improve the world. The emphasis on consequences that unites the various strands of pragmatism serves as the basis for the goal of completing reality by axiological standards that give meaning to the whole.

Notes

1. This volume, p. 127
2. "The Making of Reality," *Studies in Humanism*, chap. 19.
3. "The Metaphysics of Evolution," this volume, p. 211; "The Metaphysics of Change," this volume, p. 184.
4. This volume, p. 211.
5. "Man and God," this volume, p. 236.
6. "Axioms as Postulates," this volume, p. 457.
7. "The Relativity of Metaphysics," this volume, p. 195.

8

THE ETHICAL BASIS OF METAPHYSICS

What has Philosophy to say of Conduct?[1] Shall it place it high or low, exalt it on a pedestal for the adoration of the world or drag it in the mire to be trampled on by all superior persons? Shall it equate it with the whole or value it as nought? Philosophers have, of course, considered the matter, though not perhaps with as great success, or as carefully as they ought. And so the relations of the theory to the practice of life, of cognition to action, of the theoretical to the practical reason, form a difficult and complicated chapter in the history of thought.[2] From that history one fact, however, stands out clearly, viz. that the claims on both sides are so large and so insistent that it is hardly possible to compromise between them. The philosopher is not on the whole a lover of compromise, despite the solicitations of his lower nature. He will not, like the ordinary man of sense, subscribe to a plausible platitude like, e.g. Matthew Arnold's famous dictum that *Conduct is three-fourths of Life*. Matthew Arnold was not a philosopher, and the very precision of his formula arouses scientific suspicions. But anyhow the philosopher's imperious logic does not deal in quarters: it is prone to argue *aut Caesar aut nullus*; if Conduct be not the whole life, it is

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Humanism: Philosophical Essays (London and New York: Macmillan, 1903), pp. 1–17.

naught. Which therefore shall it be? Shall Conduct be the substance of the All, or the vision of a dream?

Now, it would seem at first that latterly the second alternative seems to have grown philosophically almost inevitable. For, under the auspices of the Hegelizing 'idealists', Philosophy has uplifted herself once more to a metaphysical contemplation of the Absolute, of the unique Whole in which all things are included and transcended. Now whether this conception has any value for metaphysics is a moot point, on which I have elsewhere expressed a decided opinion;[3] but there can hardly be a pretence of denying that it is the death of morals. For the ideal of the Absolute Whole cannot be rendered compatible with the antithetical valuations which form the vital atmosphere of human agents. They are partial appreciations, which vanish from the standpoint of the Whole. Without the distinctions of Good and Evil, Right and Wrong, Pleasure and Pain, Self and others, Then and Now, Progress and Decay, human life would be dissolved into the phantom flow of an unmeaning *mirage*. But in the Absolute all moral distinctions must, like all others, be swallowed up and disappear. The All is raised above all ethical valuation and moral criticism: it is 'beyond Good and Evil'; it is timelessly perfect, and therefore incapable of improvement. It transcends all our antitheses, because it includes them. And so to the metaphysician it seems an easy task to compose the perfection of the whole out of the imperfections of its parts: he has merely to declare that the point of view of human action, that of ethics, is not and cannot be final. It is an illusion which has grown transparent to the sage. And so, in proportion as his insight into absolute reality grows clearer, his interest in ethics wanes.

It must be confessed, moreover, that metaphysicians no longer shrink from this avowal. The typical leader of this philosophic fashion, Mr. F. H. Bradley, never attempts to conceal his contempt for ethical considerations, nor omits a sneer at the pretensions of practice to be heard in the High Court of Metaphysics. "Make the moral point of view absolute," he cries,[4] "and then realise your position. You have become not merely irrational, but you have also broken with every considerable religion."

And this is how he dismisses the appeal to practice,[5] "But if so, what, I may be asked, is the result in practice? That I reply at once is not my business"; it is merely a "hurtful[6] prejudice" if "irrelevant appeals to practical results are allowed to make themselves heard."

Altogether I can conceive nothing more pulverising to ethical aspiration than chapter xxv. of Mr. Bradley's *Appearance and Reality*.[7]

And the worst of it all is that this whole treatment of ethics follows logically and legitimately from the general method of philosophising which conducts to the metaphysical assumption of the Absolute.

Fortunately, however, there appears to be a natural tendency when the

consequences of a point of view have been stated without reserve, and become plain to the meanest intelligence, to turn round and try something fresh. By becoming openly immoralist, metaphysic has created a demand for its moral reformation. And so, quite recently, there has become noticeable a movement in a diametrically opposite direction, which repudiates the assumptions and reverses the conclusions of the metaphysical criticism of ethics which we have been considering. Instead of regarding contemplation of the Absolute as the highest form of human activity, it sets it aside as trivial and unmeaning, and puts purposeful action above purposeless speculation. Instead of supposing that Action is one thing and Thought something alien and other, and that there is not, therefore, any reason to anticipate that the pure contemplations of the latter will in any way relate to or sanction the principles which guide the former, it treats Thought as a mode of conduct, as an integral part of active life. Instead of regarding practical results as irrelevant, it makes Practical Value an essential determinant of theoretic truth. And so far from admitting the claim to independence of an irresponsible intelligence, it regards knowledge as derivative from conduct and as involving distinctively moral qualities and responsibilities in a perfectly definite and traceable way. In short, instead of being reduced to the nothingness of an illusion, Conduct is reinstated as the all-controlling influence in every department of life.

Now, I cannot but believe that all effective ethical effort ultimately needs a definite basis of assumptions concerning the nature of life as a whole, and it is because I am convinced that this new method of philosophising will supply such a basis in an almost perfect way, that I venture to avow myself its earnest advocate. If I am asked for its name, I can only say that it has been called *Pragmatism* by the chief author of its importance, Professor William James, whose recent book, *The Varieties of Religious Experience*, so many others besides the readers of philosophic literature have been enjoying. But the name in this case does even less than usual to explain the meaning, and as the nature of Pragmatism has been greatly misunderstood, and even writers of intelligence and repute have conspicuously failed to grasp it, I must try to put it in a clearer light.

And perhaps I shall best begin by mentioning a few of the ways in which Pragmatism may be reached, before explaining how it should, in my opinion, be defined. For a considerable prejudice against it has arisen in some minds by reason of the method by which Professor James has approached it.

Professor James first unequivocally advanced the pragmatist doctrine in connection with what he calls the 'Will to believe.'[8] Now this Will to believe was put forward as an intellectual right (in certain cases) to decide between alternative views, each of which seemed to make a legitimate

appeal to our nature, by other than purely intellectual considerations, viz. their emotional interest and practical value. Although Professor James laid down a number of conditions limiting the applicability of his Will-to-believe, the chief of which was the willingness to take the risks involved and to abide by the results of subsequent experience, it was not perhaps altogether astonishing that his doctrine should be decried as rank irrationalism.

Irrationalism seemed a familiar and convenient label for the new doctrine. For irrationalism is a permanent or continually recrudescent phenomenon of the moral consciousness, the persistent vogue of which it has always been hard to explain. It is ably and brilliantly exemplified at the present day by Mr. Balfour's *Foundations of Belief*, and, in an extreme and less defensible form, by Mr. Benjamin Kidd. And if, instead of denouncing it, we try to understand it, we shall not find that it is entirely absurd. At bottom indeed it indicates little more than a defect in the current rationalism, and a protest against the rationalistic blindness towards the non-intellectual factors in the foundation of beliefs. And Common Sense has always shown a certain sympathy with all such protests against the pretensions of what is called the pure intellect to dictate to man's whole complex nature. It has always felt that there are 'reasons of the heart of which the head knows nothing,' postulates of a faith that surpasses mere understanding, and that these possess a higher rationality which a narrow intellectualism has failed to comprehend.

Now if one had to choose between Irrationalism and Intellectualism, there would be no doubt that the former would have to be preferred. It is a less violent departure from our actual behaviour, a less grotesque caricature of our actual procedure. Like Common Sense, therefore, Pragmatism sympathises with Irrationalism in its blind revolt against the trammels of a pedantic Intellectualism. But Pragmatism does more; it not only sympathises, it explains. It vindicates the rationality of Irrationalism, without becoming itself irrational; it restrains the extravagance of Intellectualism, without losing faith in the intellect. And it achieves this by instituting a fundamental analysis of the common root both of the reason and of the emotional revulsion against its pride. By showing the 'pure' reason to be a pure figment, and a psychological impossibility, and the real structure of the actual reason to be essentially pragmatical, and permeated through and through with acts of faith, desires to know and wills to believe, to disbelieve and to make believe, it renders possible, nay unavoidable, a reconciliation between a reason which is humanised and a faith which is rationalised in the very process which shows their antithesis to be an error.

That, however, Pragmatism should have begun by intervening in the ancient controversy between Reason and Faith was something of an acci-

dent. In itself it might equally well have been arrived at by way of a moral revolt from the unfruitful logic-chopping and aimless quibbling which is often held to be the sum total of philosophy.

Or again, it might be reached, most instructively, by a critical consideration of many historic views, notably those of Kant and Lotze,[9] and of the unsolved problems which they leave on our hands. Or, once more, by observing the actual procedure of the various sciences and their motives for establishing and maintaining the 'truth' of their various propositions, we may come to realise that what works in practice is what in actual knowing we accept as 'true'.

But to me personally the straightest road to Pragmatism is one which the extremest prejudice can scarce suspect of truckling to the encroachments of theology. Instead of saying like Professor James, 'so all-important is it to secure the right action that (in cases of real intellectual alternatives) it is lawful for us to adopt the belief most congenial with our spiritual needs and to try whether our faith will not make it come true,' I should rather say 'the traditional notion of beliefs determined by pure reason alone is wholly incredible. For how can there be such a thing as "pure" reason? How, that is, can we so separate our intellectual function from the whole complex of our activities, that it can operate in real independence of practical considerations? I cannot but conceive the reason as being, like the rest of our equipment, a weapon in the struggle for existence and a means of achieving adaptation. It must follow that the practical use, which has developed it, must have stamped itself upon its inmost structure, even if it has not moulded it out of pre-rational instincts. In short, a reason which has not practical value for the purposes of life is a monstrosity, a morbid aberration or failure of adaptation, which natural selection must sooner or later wipe away.'

It is in some such way that I should prefer to pave the way for an appreciation of what we mean by Pragmatism. Hence I may now venture to define it as the thorough recognition that the purposive character of mental life generally must influence and pervade also our most remotely cognitive activities.[10]

In other words, it is a conscious application to the theory of life of the psychological facts of cognition as they appear to a teleological Voluntarism. In the light of such a teleological psychology the problems of logic and metaphysics must appear in a new light, and decisive weight must be given to the conceptions of Purpose and End. Or again, it is a systematic protest against the practice of ignoring in our theories of Thought and Reality the purposiveness of all our actual thinking, and the relation of all our actual realities to the ends of our practical life. It is an assertion of the sway of human valuations over every region of our experience, and a denial

that such valuation can validly be eliminated from the contemplation of any reality we know.

And inasmuch as such teleological valuation is also the special sphere of ethical inquiry, Pragmatism may be said to assign metaphysical validity to the typical method of ethics. At a blow it awards to the ethical conception of *Good* supreme authority over the logical conception of *True* and the metaphysical conception of *Real*. The Good becomes a determinant both of the True and of the Real. For from the pursuit of the latter we may never eliminate the reference to the former. Our apprehension of the *Real*, our comprehension of the *True*, is always effected by beings who are aiming at the attainment of some *Good*, and it seems a palpable absurdity to deny that this fact makes a stupendous difference.

I should confidently claim, therefore, that by Pragmatism a further step has been taken in the analysis of our experience which amounts to an important advance in that self-knowledge on which our knowledge of the world depends. Indeed, this advance seems to me to be of a magnitude comparable with, and no less momentous than, that which gave to the *epistemological* question priority over the *ontological*.

It is generally recognised as the capital achievement of modern philosophy to have perceived that a solution of the ontological question—*What is Reality*?—is not possible until it has been decided how Reality can come within our ken. Before there can be a real for us at all, the Real must be *knowable*, and the notion of an unknowable reality is useless, because it abolishes itself. The true formulation therefore of the ultimate question of metaphysics must become—*What can I know as real?* And thus the effect of what Kant called the Copernican revolution in philosophy is that ontology, the theory of Reality, comes to be conditioned by epistemology, the theory of our knowledge.

But this truth is incomplete until we realise all that is involved in the knowledge being *ours* and recognise the real nature of our knowing. Our knowing is not the mechanical operation of a passionless 'pure' intellect, which

> Grinds out Good and grinds out Ill,
> And has no purpose, heart, or will.

Pure intellection is not a fact in nature; it is a logical fiction which will not really answer even for the purposes of technical logic. In reality our knowing is driven and guided at every step by our subjective interests and preferences, our desires, our needs and our ends. These form the motive powers also of our intellectual life.

Now what is the bearing of this fact on the traditional dogma of an

absolute truth and ultimate reality existing for themselves apart from human agency? It would utterly debar us from the cognition of 'Reality as it is in itself and apart from our interests' if such a thing there were.

For our interests impose the conditions under which alone Reality can be revealed. Only such aspects of Reality can be revealed as are not merely knowable but as are objects of an actual desire, and consequent attempt, to know. All other realities or aspects of Reality, which there is no attempt to know, necessarily remain unknown, and for us unreal, because there is no one to look for them. Reality, therefore, and the knowledge thereof, essentially presuppose a definitely directed effort to know. And, like other efforts, this effort is purposive; it is necessarily inspired by the conception of some good at which it aims. Neither the question of *Fact*, therefore, nor the question of *Knowledge* can be raised without raising also the question of *Value*. Our 'Facts' when analysed turn out to be 'Values', and the conception of 'Value' therefore becomes more ultimate than that of 'Fact'. Our valuations thus pervade our whole experience, and affect whatever 'fact', whatever 'knowledge' we consent to recognise. If, then, there is no *knowing* without *valuing*, if knowledge is a form of *Value*, or, in other words, a factor in a Good, Lotze's anticipation[11] has been fully realised, and the foundations of metaphysics have actually been found to lie in ethics.

In this way the ultimate question for philosophy becomes—What is Reality *for one aiming at knowing what*? 'Real' *means*, real for what *purpose*? to what *end*? in what *use*? And the answer always comes in terms of the will to know which puts the question. This at once yields a simple and beautiful explanation of the different accounts of Reality which are given in the various sciences and philosophies. The purpose of the questions being different, so is their purport, and so must be the answers. For the direction of our effort, itself determined by our desires and will to know, enters as a necessary and ineradicable factor into whatever revelation of Reality we can attain. The response to our questions is always affected by their *character*, and *that* is in our power. For the initiative throughout is ours. It is for us to consult the oracle of Nature or to refrain; it is for us to formulate our demands and to put our questions. If we question amiss, Nature will not respond, and we must try again. But we can never be entitled to assume either that our action makes no difference or that nature contains no answer to a question we have never thought to put.[12]

It is no exaggeration therefore to contend, with Plato, that in a way the Good, meaning thereby the conception of a final systematisation of our purposes, is the supreme controlling power in our whole experience, and that in abstraction from it neither the True nor the Real can exist. For whatever forms of the latter we may have discovered, some purposive activity, some conception of a good to be attained, was involved as a condition of

the discovery. If there had been no activity on our part, or if that activity had been directed to ends other than it was, there could not have been discovery, or *that* discovery.

We must discard, therefore, the notion that in the constitution of the world we count for nothing, that it matters not what we do, because Reality is what it is, whatever we may do. It is true on the contrary that our action is essential and indispensable, that to some extent the world (our world) is of our making, and that without us nothing is made that is made. To what extent and in what directions the world is plastic and to be moulded by our action we do not know as yet. We can find out only by trying: but we know enough for Pragmatism to transfigure the aspect of existence for us.

It frees us in the first place from what constitutes perhaps the worst and most paralysing horror of the naturalistic view of life, the nightmare of an *indifferent* universe. For it proves that at any rate Nature cannot be indifferent to us and to our doings. It may be hostile, and something to be fought with all our might; it may be unsuspectedly friendly, and something to be co-operated with with our whole heart; it *must* respond in varying ways to our various efforts.

Now, inasmuch as we are most familiar with such varying responsiveness in our personal relations with others, it is I think natural, though not perhaps necessary, that the pragmatist will tend to put a personal interpretation upon his transactions with Nature and any agency he may conceive to underlie it. Still even ordinary language is aware that things behave differently according as you 'treat' them, that e.g., *treated* with fire sugar burns, while *treated* with water it dissolves. Thus in the last resort the anthropomorphic 'humanism' of our whole treatment of experience is unavoidable and obvious; and however much he wills to disbelieve it the philosopher must finally confess that to escape anthropomorphism he would have to escape from self. And further, seeing that ethics is the science of our relations with other persons, i.e. with our environment *qua* personal, this ultimateness of the personal construction we put upon our experience must increase the importance of the ethical attitude towards it. In other words, our metaphysics must in any case be *quasi-ethical*.

It may fairly be anticipated, secondly, that Pragmatism will prove a great tonic to re-invigorate a grievously depressed humanity. It sweeps away entirely the stock excuse for fatalism and despair. It proves that human action is always a perceptible, and never a negligible, factor in the ordering of nature, and shows cause for the belief that the disparity between our powers and the forces of nature, great as it is, does not amount to incommensurability. And it denies that any of the great questions of human concern have been irrevocably answered against us. For most of them have not even been asked in the pragmatist manner, and in no case has there been

that systematic and clear-sighted endeavour which extorts an answer from reluctant nature. In short, no doctrine better calculated to stir us to activity or more potent to sustain our efforts has ever issued from the philosophic study.

It is true that to gain these hopes we must make bold to take some risks. If our action is a real factor in the course of events, it is impossible to exclude the contingency that if we act wrongly it may be an influence for ill. To the chance of salvation there must correspond a risk of damnation. We select the conditions under which reality shall appear to us, but this very selection selects us, and if we cannot contrive to reach a harmony in our intercourse with the real, we perish.

But to many this very element of danger will but add to the zest of life. For it cannot but appear by far more interesting than the weary grinding out of a predetermined course of things which issues in meaning less monotony from the unalterable nature of the All. And the infinite boredom with which this conception of the course of nature would afflict us, must be commingled with an equal measure of disgust when we realise that on this same theory the chief ethical issues are eternally and inexorably decided against us. Loyal co-operation and Promethean revolt grow equally unmeaning. For man can never have a ground for action against the Absolute. It is eternally and inherently and irredeemably perfect, and so leaves no ground for the hope that the 'appearances' which make up our world may somehow be remoulded into conformity with our ideals. As they cannot now impair the inscrutable perfection of the Whole, they need not ever alter to pander to a criticism woven out of the delusive dreams of us poor creatures of illusion.

It is a clear gain, therefore, when Pragmatism holds out to us a prospect of a world that can become better, and even has a distant chance of becoming perfect, in a sense which we are able to appreciate. The only thing that could be preferred to this would be a universe whose perfection could not only be metaphysically deduced, but actually experienced: but such a one our universe emphatically is *not*.

Hence the indetermination which, as Professor James has urged,[13] Pragmatism seems to introduce into our conception of the world is in the main an advantage. It brings out a connexion with the ethical conception of Freedom and the old problems involved in it, which I cannot here consider fully. I will only say this, that while determinism has of course an absolutely indefeasible status as a scientific postulate, and is the only assumption we can use in our practical calculations, we may yet have to recognise the reality of a certain measure of indetermination. It is a peculiarity of ethics that this indetermination is forced upon it, but in itself it is probably universal. In its valuation, however, I should differ from Professor

James: I should regard it neither as good nor as ineradicable. And I should contend that our indeterminism cannot have the slightest ethical value unless it both vindicates and emphasises our moral responsibility.

And this brings me to the last point I wish to make, viz. the stimulus to our feeling of moral responsibility which must accrue from the doctrine of Pragmatism. It contains such a stimulus, alike in its denial of a mechanical determination of the world which is involved in its partial determination by our action, and in its admission that by wrong action we may evoke a hostile response, and so provoke our ruin. But in addition it must be pointed out that if every cognition, however theoretical, have practical value, it is potentially a moral act. We may incur indeed the gravest responsibilities in selecting the aims of our cognitive activities. We may become not merely wise or foolish but also good or bad by willing to know the good or the bad; nay, our very will to know may so alter the conditions as to evoke a response congenial with its character.

It is a law of our nature that what we seek that we shall, in some measure, find. And so, like a rainbow, Life glitters in all the colours; like a rainbow also it adjusts itself to every beholder. To the dayflies of fashion life seems ephemeral; to the seeker after permanence, it strikes its roots into eternity. To the empty, it is a yawning chasm of inanity; to the full, it is a source of boundless interest. To the indolent, it is a call to despairing resignation; to the strenuous, a stimulus to dauntless energy. To the serious, it is fraught with infinite significance; to the flippant, it is all a somewhat sorry jest. To the melancholic, each hope is strangled in its birth; to the sanguine, two hopes spring from every grave of one. To the optimistic, life is a joy ineffable; to the pessimistic, the futile agony of an atrocious and unending struggle. To love it seems that in the end all must be love; to hate and envy it becomes a hell. The cosmic order, which to one displays the unswerving rigour of a self-sufficient mechanism, grows explicable to another only by the direct guidance of the hand of God. To those of little faith the heavens are dumb; to the faithful, they disclose the splendours of a beatific vision.

And so each sees Life as what he has it in him to perceive, and variously transfigures what, without his vision, were an unseen void. But all are not equally clear-sighted, and which sees best, time and trial must establish. We can but stake our little lives upon the ventures of our faith. And, willing or unwilling, that we do and must.

And now in conclusion let me avow that after professing to discuss the relations of Philosophy and Practice, I must seem to have allotted an undue share of my time to the former, and to have done little more than adumbrate the practical consequences of my philosophy. In extenuation I must urge that the stream of Truth which waters the fertile fields of Conduct has its sources in the remote and lonely uplands, *inter apices philosophiae*, where

the cloud-capped crags and slowly grinding glaciers of metaphysics soar into an air too chill and rare for our abiding habitation, but keenly bracing to the strength of an audacious climber. Here lie our watersheds; hither lead the passes to the realms unknown; hence part our ways, and here it is that we must draw the frontier lines of Right and Wrong. And, moreover, I believe that in the depths of every soul there lurks a metaphysic aspiration to these heights, a craving to behold the varied patterns that compose life's whole spread out in their connexion. With the right guides such ascents are safe, and even though at first twinges of mountain-sickness may befall us, yet in the end we shall return refreshed from our excursion and strengthened to endure the drudgery and commonplace that are our daily portion.

NOTES

1. This essay, originally an Ethical Society address, appeared in the July 1903 number of the *International Journal of Ethics*. It is now reprinted with a few additions, the chief of which is the long note on pp. 138–39. Its title has of course been objected to as putting the cart before the horse. To which it is easy to reply that nowadays it is no longer impracticable to use a motor car for the removal of a dead horse. And the paradox implied in the title is, of course, intentional. It is a conscious inversion of the tedious and unprofitable disquisitions on 'the metaphysical basis of' this, that, and the other, which an erroneous conception of philosophical method engenders. They are wrong in method, because we have not de facto a science of first principles of unquestionable truth from which we can start to derive the principles of the special sciences. The converse of this is the fact, viz. that our 'first' principles are postulated by the needs, and slowly secreted by the labours, of the special sciences, or of such preliminary exercises of our intelligence as build up the common-sense view of life.

2. Cp. the essay on *'Useless' Knowledge* for its treatment by Plato and Aristotle.

3. *Riddles of the Sphinx*, ch. x.

4. *Appearance and Reality*, pp. 500-501.

5. Ibid. p. 450.

6. But does not this "*hurtful*" reaffirm the ethical valuation which Mr. Bradley is trying to exclude?

7. If in any one's mind any lingering doubts have survived as to the purport of this philosophic teaching, he has only to turn to the ingenious but somewhat flippant and prolix exposition of the same doctrine in Mr. A. E. Taylor's *Problem of Conduct*. To Mr. Taylor the real problem of Conduct would appear to be why any one should continue to hanker after so manifest an absurdity as a rule of conduct.

8. He had, however, laid the foundation of his doctrine as long ago as 1879 in an article in *Mind*. And, though the name is new, in some form or other the recognition of the *thing* runs through the whole history of thought. Indeed, it would be strange if it had been otherwise, seeing that, as we contend, the actual procedure of the human mind has always been (unconsciously) pragmatist.

9. Or, as Professor James suggested, and as Prof. A. W. Moore has actually done in the case of Locke (see his *Functional versus the Representational Theory of Knowledge*), by a critical examination of the English philosophers.

10. This is wider, and I think more fundamental, than any of the definitions in Baldwin's *Dictionary of Philosophy* (ii. pp. 321-322), for the reason that the logical development of pragmatist method in my essay on *Axioms as Postulates* came out (in *Personal Idealism*) too recently to be available for the purposes of the *Dictionary*. I think, however, that intrinsically also neither Peirce's, nor James's, nor Baldwin's accounts are quite adequate. In Peirce's sense, that a conception is to be tested by its practical effects, the principle is so obvious as to be comparatively unimportant, and, perhaps, as he says, is somewhat a matter of youthful buoyancy. James's definition, that the whole meaning of a conception expresses itself in practical consequences, does not emphasise the essential priority of action to thought, and does not explicitly correlate it with his own 'will to believe'. Baldwin tries to confine it to the genetic sphere and to deny that it yields a philosophy of reality. But his own subsequent account (*s.v. Truth*) of the psychology of the truth-valuation seems inconsistent with this and far more satisfactory. He fails, moreover, to explain how he can get at reality without knowing it, and how our estimations of what 'truth' *is* can disregard and become independent of our modes of establishing it.

11. *Metaphysics* (Eng. Tr.), ii. p. 359.

12. That the Real has a determinate nature which the knowing reveals but does not affect, so that our knowing makes no difference to it, is one of those sheer assumptions which are incapable, not only of proof, but even of rational defence. It is a survival of a crude realism which can be defended only, *in a pragmatist manner*, on the score of its practical convenience, as an avowed fiction. On this ground and as a mode of speech we can, of course, have no quarrel with it. But as an ultimate analysis of the fact of knowing it is an utterly gratuitous interpretation. The plain fact is that we come into contact with reality only in the act of 'knowing' or experiencing it. As *unknowable*, therefore, the Real is *nil*, as *unknown*, it is only potentially real. The situation therefore in no wise sanctions the assumption that what the Real *is* in the act of knowing, it is also outside that relation. One might as well argue that because an orator is eloquent in the presence of an audience, he is no less voluble in addressing himself. The simple fact is that we know the Real *as it is when we know it*; we know nothing whatever about what it is apart from that process. It is meaningless therefore to inquire into its nature as it is in itself. And I can see no reason why the view that reality exhibits a rigid nature unaffected by our treatment should be deemed theoretically more justifiable than its converse, that it is utterly plastic to our every demand—a travesty of Pragmatism which has attained some popularity with its critics. The actual situation is of course a case of interaction, a process of cognition in which the 'subject' and the 'object' determine each the other, and both 'we' and 'reality' are involved, and, we might add, *evolved*. There is no warrant therefore for the assumption that either of the poles between which the current passes could be suppressed without detriment. What we ought to say is that when the mind 'knows' reality both are affected, just as we say that when a stone falls to the ground both it and the earth are attracted.

We are driven, then, to the conviction that 'the determinate nature of reality'

does *not* subsist 'outside' or 'beyond' the process of knowing it. It is merely a lesson of experience that we have enshrined in the belief that it does so subsist. Things behave in similar ways in their reaction to modes of treatment, the differences between which seem to us important. From this we have chosen to infer that things have a rigid and unalterable nature. It might however have been better to infer that therefore the differences must seem unimportant to the things.

The truth is that the nature of things is not *determinate* but *determinable*, like that of our fellow-men. Previous to trial it is indeterminate, not merely for our ignorance, but really and from every point of view, within limits which it is our business to discover. It grows determinate by our experiments, like human character. We all know that in our social relations we frequently put questions which are potent in determining their own answers, and without the putting would leave their subjects undetermined. 'Will you love me, hate me, trust me, help me?' are conspicuous examples, and we should consider it absurd to argue that because a man had begun social intercourse with another by knocking him down, the hatred he had thus provoked must have been a pre-existent reality which the blow had merely elicited. All that the result entitles us to assume is a capacity for social feeling variously responsive to various modes of stimulation. Why, then, should we not transfer this conception of a determinable indetermination to nature at large, why should we antedate the results of our manipulation and regard as unalterable facts the reactions which our ignorance and blundering provoke? To the objection that even in our social dealings not all the responses are indeterminate, the reply is that it is easy to regard them as having been determined by earlier experiments.

In this way, then, the notion of a 'fact-in-itself' might become as much of a philosophic anachronism as that of a 'thing-in-itself', and we should conceive the process of knowledge as extending from absolute chaos at the one end (before a determinate response had been established) to absolute satisfaction at the other, which would have no motive to question the absolutely factual nature of its objects. But in the intermediate condition of our present experience all recognition of 'fact' would be provisional and relative to our purposes and inquiries.

13. *Will to Believe*, p. ix.

9

REALITY AND 'IDEALISM'

The readers of Mr. Ritchie's papers will have learnt by this time that they may expect to be entertained with a clear account of his views, neatly phrased and intelligibly presented, and not disdainful of an occasional touch of humour.[1] And in these respects they will have not been disappointed by his brilliant disquisition on—*What is reality*?—in the May number of the *Philosophical Review*. But if they sought fresh light on one of the most puzzling and fundamental of philosophic problems, it is to be feared that they were not equally well satisfied. Mr. Ritchie's paper is polemical rather than investigatory, and he seems more concerned to make dialectical points against his adversaries than to probe his subject to the bottom. And as his adversaries' views are very various, and often have little in common but their disagreement with Mr. Ritchie's, and as, moreover, they are not stated or definitely referred to, the total effect is somewhat confusing. Nor is the confusion improved by the way in which Mr. Ritchie discusses some two or three different questions about reality in the same breath. The justification in his mind for this procedure evidently lies in the fact that they all offer a basis for objections to his own views, which he

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Humanism: Philosophical Essays (London and New York: Macmillan, 1903), pp. 110–127.

would, perhaps, not object to have called Neo-Hegelian. But this does not constitute any intrinsic kinship between the views he criticises, and his discussion would have gained largely if he had added to his classification of the various *sorts* of reality a classification of the various *questions that may be raised about it*. It would be too much, perhaps, to expect Mr. Ritchie to excel the rest of his school as much in substance as he does in style, but it seems evident that he has, as little as they, kept clear of the Hegelian confusion of epistemology and metaphysics, to which Professor Seth[2] has of late drawn so much attention.

There are at least *four* questions, which Mr. Ritchie's paper trenches upon. They are —

I. How do we know that there is any reality at all, or how do we come to assert an external world?

II. What is reality at the beginning of inquiry, i.e. what is the primary datum to be explained?

III. How is it to be explained—by what criteria do we inquire into reality?

IV. What does reality turn out to be—after inquiry?

Of these, I. and III. seem to be epistemological, while II. is psychological, and IV. plainly metaphysical. Mr. Ritchie does not seem to distinguish II. from III., attributes his answer to III. without more ado to IV., and refers to I. only at the end, by way of meeting a logical objection to his view of IV. This confusion is shown also in his method of proof. His real purpose is to establish certain metaphysical views as to the nature of ultimate reality, but he treats his subject for the most part as if it were an epistemological inquiry into the criteria of reality, and when, after establishing his metaphysical view of reality to his satisfaction, he is confronted[3] by the logical impossibility of identifying thought with its object, he suddenly throws us back upon the primary subjectivity of all experience. And all this without a hint of a *μεταβάσις εἰς ἄλλο γένος*. The connexion is no doubt clear enough to Mr. Ritchie's mind, if, as must be supposed, he follows T. H. Green in his fearful and wonderful leap from the fact that all phenomena appear to some individual self to the conclusion that they are, *therefore*, appearances to a universal self; but he might at least have warned us that his opponents have repeatedly declared their inability to compass such saltatory exercises, and regard the two halves of the argument as belonging respectively to epistemology and to metaphysics, and the transition from the one to the other as a paralogism.

If, however, we refuse to take this Greenian *salto mortale*, it is evident that the first question must be settled before any of the rest can arise at all. For, as Professor Seth has so well pointed out, realism and idealism mean very different things according as they are taken in an epistemological or a

metaphysical sense, and "it is possible to be epistemologically a strenuous realist and an idealist in the metaphysical sense of the term."[4] Nay, "it is only in virtue of epistemological realism that we can avoid scepticism, and so much as begin our journey towards metaphysical idealism." If, then, epistemological idealism is solipsism and "twin brother to scepticism," it must be surmounted before the nature of reality can be discussed. If it is not surmounted—*cadit quaestio*—it becomes futile to discuss whether the real is one or many, whether its criterion is consistency or what, if there is no objectivity at all. Mr. Ritchie has, of course, a perfect right to call a halt here, and to refuse to discuss anything further until his opponents have successfully emerged from the clutches of subjective idealism. But once they have been permitted to escape, once he has conceded the objectivity of the phenomena which form the content of consciousness, he is *not* entitled to revert to the prior question. In other words, the discussion of the question—What is reality?—presupposes a settlement of the question—Is there reality?—in the affirmative. It is only when reality has been admitted to exist that we can begin to distinguish the real from the unreal, and to enumerate the different sorts and criteria of each.

It is necessary in the next place to put the primitive *datum explicandum* in the proper light. The primary psychological fact is that everything that is is real, and that the burden of proof lies on those who deny that anything is real. Nor does Mr. Ritchie dispute this, though he minimises its importance, and apparently fails to see that reality in this sense rests on a totally different footing from all others. For it is the primary fact which all the rest are more or less complete theories to explain, and to which they must be referred in order to test their validity. If they prove capable of explaining what they set out to explain, we may reach a loftier view of reality, which will transfigure our primary datum for us, but which even so cannot be considered in abstraction from its basis; if they do not, the other 'senses of reality' are worthless. For their work is hypothetical and derivative, and if the conditions under which we ascribed reality to these interpreters of reality are not fulfilled, their *raison d'être* has vanished. But reality survives—even though its inscrutable flux of phenomena should laugh to scorn the attempts at comprehending it which it provokes.

But this unique position of primary reality Mr. Ritchie quite fails to appreciate.[5] Hence it is on the basis of an insufficient recognition of the psychological data that he proposes to consider what reality is. This question is plainly an ontological one, but Mr. Ritchie treats it as if it were epistemological, and = 'How do we know a phenomenon to be (ultimately) real?' I.e. he substitutes for the ontological inquiry into the *ratio essendi* of reality an epistemological inquiry into its *ratio cognoscendi* or the *criterion* of reality, and then unhesitatingly attributes to his results a metaphysical

validity. Yet he seems quite unaware that such a method, even if successful, would be defective and inadequate. Even at its best, even if it could be shown that reality could be *known* only as a coherent system of thought-relations, it would not necessarily follow that reality *was nothing more*, and he would not necessarily have proved anything but the impotence of his thought to grasp reality, by reducing his symbolical expressions for reality to absurdity and contradiction. Thus his proofs cannot prove what he desires, and his refutations only recoil upon his method.

But it may be shown also that his criterion is not valid. He suggests[6] a triple test of rationality, a triple basis for the metaphysical assertion that reality is thought. (1) "The agreement between the inferences drawn from the experience of our different senses; (2) the agreement between the judgments of different persons; (3) the harmony of present experience with the results of their and our previous experience, constitute between them the test of reality." It is to be feared that "between them" they fall very far short of giving a trustworthy test of reality.

(1) The first is open to objection as a matter of fact. It is doubtful how far the testimonies of the various senses really corroborate one another, and how far they are not rather incommensurable and referred to the same 'thing' for reasons of practical convenience. Are after-images and overtones, which *regularly* accompany sights and sounds, to be esteemed unreal because we generally find it convenient to neglect them? And yet it is hard to say to what data of touch they correspond. Again, what can this criterion make of cases of hyperaesthesia of one sense, or of an occasional activity of some special sensitiveness? Are they to be rejected because they necessarily lie beyond confirmation by the other senses? As far as this criterion goes, there is nothing to prevent a real thing from contravening it, and an 'unreal' thing from conforming to it. Is 'Pepper's ghost' unreal because it cannot be touched? Or is a hallucination affecting several senses to be esteemed real?

(2) The second criterion is no better than the first. So Mr. Ritchie 'smells a rat', in the case of his hypothetical mouse,[7] and limits its value by stipulating that B, C, D, and E (who do not see it) should have good eyesight. But how is it to be established that A (who does see it) does not considerably surpass them in the delicacy of his senses? In this difficulty, Mr. Ritchie proposes to call in expert opinion in the shape of "a hungry cat." (What scorn he would pour on such an appeal to the lower animals if it were a question of establishing the objectivity of an apparition!) Very good. But how if the cat side with the minority? It is to be hoped that Mr. Ritchie will prefer science to democracy, and the authoritative judgment of Athanasius and the cat against the rest of the world! If he does not, he might work out an amusing theory making the *Referendum* the ultimate test of reality. That, at least, would be a definite method of utilising the experience of

others, such as is at present lacking. We act quite inconsistently in sometimes submitting to the superior delicacy of the expert's senses, and sometimes rejecting it. A room full of unmusical or inartistic people would hardly dispute about tones or colours with a single musician or painter, but an assembly of non-sensitives would probably deny that Macbeth saw a ghost (though who more qualified than Macbeth to see the ghost of Banquo?). The colour-blind, perhaps because they are in a minority, do not dispute the objectivity of colours they cannot see, but upon what logical principle should we be less forbearing towards those who claim to see the ultra-violet and infra-red rays of the spectrum, or the luminosity of a magnetic field?—In short, just as the excluding value of non-conformity was impaired in the first case by the possibility of genuine hyperaesthia in the individual, so in the second it is impaired by the possibility of collective hyperaesthia. And just as in the first case conformity did not exclude error, owing to the possibility of complex hallucination, so it fails in the second, owing to the possibility of collective hallucination.

(3) The third criterion at first seems more valuable—until we recollect that every new fact and every new experience is in some degree out of harmony with and contradictory of our previous experience.[8] Would it not be strange, then, to allow our own inexperience, and the stupidity of our ancestors to exercise an absolute censorship over the growth of knowledge? Besides, it so happens that in most cases when 'universal experience' is appealed to, its voice is self-contradictory. (What right have we, e.g. to reject countless traditions in order to prove that miracles are 'contrary to experience'?)

But perhaps Mr. Ritchie does not contend that any one of his criteria is singly sufficient as a test of reality and proposes to employ them collectively. But if so, should he not show some probability that they will always, or even normally, tend in the same direction? And even if they did, that would establish, not the collective theoretic certainty of criteria, each of which was individually fallible, much less a necessary basis for metaphysical inferences, but only a sort of practical probability, which it might be convenient to act upon. Thus the boasted rationality of the real reduces itself to this: upon Mr. Ritchie's own showing rationality is not an ultimate test, but resolvable into the three criteria he mentions, and in the end their value turns out to be practical!

Yet it may be that humbling the pretensions of this pseudo-rationality does good service in drawing attention to the commonest and most influential of the practical tests of reality, which may be said to have underlain and guided the development of all the rest. It lies in the fact emphasised by Professor James in his wonderful chapter on the perception of reality[9] that that is adjudged real which has intimate "relation to our emotional and

active life," i.e. practical value. It is this criterion which has constituted the objective world of ordinary men, by excluding from it the world of dreams, hallucinations, and the transient though normal 'illusions of the senses'. It is this which accounts for the superior reality so often ascribed to feelings, especially to pleasure and pain, which Mr. Ritchie mentions.[10] It is this which absorbs into it Mr. Ritchie's fifth, or 'ethical', sense of reality. It is this, lastly, which has moulded the whole development of the intellect, and so pervades all Mr. Ritchie's criteria and reduces them to dependence upon it. Hence if we are to speak of any 'main (derivative) sense of reality' at all, it must certainly be conceded to Professor James that "whatever things have intimate and continuous connexion with my life, are things of whose reality I cannot doubt."

But though there can be no doubt of the practical importance of this criterion, there may be much about its speculative value. The history of the practical struggle which has evolved us and our minds seems to offer but slender guarantees that our faculties should have been fitted for, and our energies directed towards, those aspects of reality which are of the greatest theoretic importance,[11] and hence arguments from practical or moral necessity, universal desires, and the like, are not usually supposed to yield the safest approach to the ultimate reality of things.

And not only must it be said that Mr. Ritchie's tests are not, properly speaking, rational at all, but it must be pointed out that he actually shrinks from mentioning in this place the test of rationality in its simplest and severest shape, viz. that of conformity to the necessary laws of our thought. The omission is surprising, and one would fain ascribe it to the perception that it would have been too palpable a begging of the issue to have made conformity with the laws of thought the *test* of reality in an argument designed to *show* that reality ultimately lay in the determinations of our thought. Or can it be due to the fact that the chief characteristic of reality is its Becoming, and that Becoming and its defiance of the law of Contradiction is what our thought has never been able to grasp? Yet the criterion is not without value. We are reluctant to admit facts and explanations which seem to contravene it, such as, e.g. the four-dimensionality of Space and the illusoriness of Time, and would only accept them as inferences, e.g. from the untying of Zöllner's knots and the alleged occurrence of premonitions, in the very last resort.

What then is the result of a critical survey of the various criteria of reality? Is it not that though all may be of service, none can be entirely relied upon as the *ratio cognoscendi* of reality? There is no royal road to omniscience any more than to omnipotence, even though we do not hold with Mr. Ritchie that the two coincide. The cognition of reality is a slow and arduous process, and of its possession we cannot be sure until we possess

it *whole*. The only certain and ultimate test of reality is the absence of internal friction, is its undisputed occupation of the field of consciousness, in a word, its self-sufficiency. It is because reality does *not* display this character that thought has to be called in to interpret it. If it did, there would be no distinction between real and unreal, between what is 'really' presented and 'merely imagined', between the self and the world, and there would be no such thing as thought. As Professor James so well points out[12] a hallucinatory candle occupying the whole field of consciousness would be equivalent to a real one. But as a matter of fact the contents of consciousness present no such permanence and self-evidence; their initial state is a fleeting succession of conflicting presentations which supplant and contradict one another. Some of these are frequently followed by painful, others by pleasurable feelings, and the penalty of idle acquiescence in the flux of phenomena is rapid death. So a dire necessity is laid upon the subject to distinguish himself from the world, and to set about thinking how phenomena may be controlled. He naturally begins by ascribing to the phenomena which are followed by pains or other practically important consequences a reality not shared by the rest. This first interpretation of the chaos of presentations is probably the first for which we can have direct testimony, and represents the view of reality taken by savages and small children. It is merely an extension of this view when the 'plain man', in the condition of 'natural realism' distinguishes hallucinations, fancies, and dreams from *true* reality.

To effect this he uses whatever tests seem most practically useful—among others those of 'coherence' and 'consistency'. Thus, the plain man's view is simply the first stage in the attempt to reach a harmony of the real. The view of the physicists represents a second and subsequent stage. And Mr. Ritchie's philosophy of the ultimate nature of reality is possibly a third. Each leads on to the other, because each is successively recognised *not* to be a coherent and consistent account of the world and *not* to eliminate the irrational and unsatisfactory element in experience. The plain man's 'things,' the physicist's 'atoms', and Mr. Ritchie's 'Absolute', are all of them more or less persevering and well-considered schemes to interpret the primary reality of phenomena, and in this sense Mr. Ritchie is entitled to call the 'sunrise' a theory.[13] But the chaos of presentations, out of which we have (by criteria ultimately *practical*) *isolated* the phenomenon we subsequently call sunrise, is *not* a theory, but the fact which has called all theories into being.

In addition to generating hypothetical objects to explain phenomena, this process of the interpretation of reality by our thought also bestows a derivative reality on the abstractions themselves with which thought works. If they are the instruments wherewith thought accomplishes such effects

upon reality, they must surely be themselves real. Hence philosophers have long asserted the reality of Ideas, and we commonly hold the triangle and the space of mathematical abstraction to be *the real* triangle and *the real* space. (Mr. Ritchie's fourth sense.) Similarly the goals to which the methods of our thought tend—its intrinsic ideals—acquire a hypothetical reality of a lofty order. For it is evident that if the real nature of phenomena is to be discovered by the way of thought, the supreme ideals of that thought must be, *or be realised by*, the ultimate reality. But it would not follow that those ideals would render reality mere thought. For they might point either at a reality which should transcend thought, or at one of which thought should be but a single activity—even as it is now the activity of real beings.

But it is needless to discuss what would happen to thought if reality had been rendered harmonious, in view of the fact that no philosophy has succeeded in doing this. The whole attempt is dependent for its validity on its success, and its success is, to put it mildly, imperfect. The scientific view of atoms goes behind the popular view of 'things', because it holds that the latter do not construct a tenable view of phenomena. Mr. Ritchie would treat the atoms similarly. But would he seriously contend that he can already give an entirely consistent, coherent, and intelligible view of the whole world, giving a reason why everything is exactly what it is and not otherwise? Of course Mr. Ritchie does not lay claim to such omniscience. But if he cannot, in what respect is he better than those publicans and sinners, the 'plain men' and the realists? If he cannot, why make such a fuss about formal coherency and consistency as the test of reality? By his own admission they represent a postulate which is never actually realised, and for aught we know never can be. If he cannot, lastly, what boots it to explain that though reality is not thought for us, it is for God?[14] This free and easy appeal to the Deity, in the midst of a discussion of *human* knowledge, in order to silence an opponent and to fill up any gap in the argument, ought surely to be as severely reprobated as the mediaeval practice of ascribing any ill-understood fact or bit of knowledge to the agency of the Devil. The question is not whether to a divine mind, supposing its existence to be tenable in Mr. Ritchie's sense, Reality is Thought, but whether that assertion is a valid defence against the objection that Mr. Ritchie has given away his case when he has admitted that reality is not thought to human minds. Until, then, Mr. Ritchie can bring rather more convincing proof of his approaching apotheosis and omniscience, it must be contended that he has neither made out his assertion that rationality is the test of reality, nor its connexion with the metaphysical dogma that the real is ultimately the thought of a 'divine mind'.

This question as to the ultimate nature of reality, forming the ultimate

problem of ontology, brings us to the fourth and last question which may be raised about reality. And enough has been said concerning the imperfections of our methods of interpreting reality, to render it clear that we are perhaps hardly yet entitled to give any very confident answer to this question. From a purely scientific standpoint, I can see no reason for attempting to prejudge the answer. It is pre-eminently a question to be met with a *solvitur ambulando*. From other points of view no doubt several different answers may be given, and Mr. Ritchie's pantheistic doctrine doubtless remains tenable, even though its epistemological basis be insecure. But at least as much may be claimed for the doctrine which Mr. Ritchie is most anxious to refute, the doctrine which denies most emphatically that existence is ever reducible to essence, and holds that the individual is the real.

At all events it is, I think, possible to show that this doctrine is neither uncritical nor unable to maintain itself against Mr. Ritchie's objections. Mr. Ritchie regards it as the uncritical product of the popular *Vorstellung*, because it makes its appearance at a very early stage in the interpretation of reality. But this should rather speak in its favour, if it is able to reassert its validity after the fullest critical examination of the facts and of objections such as Mr. Ritchie's.

Those objections arise in the first place out of his failure to appreciate the development in our conceptions of individuality and reality which has corresponded to the evolution of the objects which they symbolise, and in the second, out of his misunderstanding the respective positions which his opponents' logic assigns to thought-symbols and that which they symbolise. To say that the individual is the real and that the real is individual, is to make a proposition concerning a reality beyond it. It draws our attention to a fact which its terms cannot fully express. It is an adjectival description of reality in terms of thought-symbols. But it is not substantival. It is no definition of reality, but a reference to it, which expresses a characteristic feature intelligibly to real beings who can *feel* the extra-logical nature of reality. Hence it does not even necessarily state the *essence* of reality;[15] for the theoretic validity (not the practical convenience) of the doctrine of essence is called in question, and the fortunes of the expression certainly do not affect the *existence* of reality. But Mr. Ritchie treats it as if the sum and substance of all reality were supposed to be contained in it, and dissects it mercilessly in order to show that there is nothing in it. But in criticising the terms of the proposition he thinks he annihilates also the reality beyond it. He is mistaken; for he tramples only on the shadow of his foe. The individual and the real (i.e. the thing symbolised by those symbols of our speech) are *not* a couple of categories, nor even fully defined concepts. They are just sign-posts, which to a purely thinking mind might convey no meaning, or the contradictory meanings Mr. Ritchie criticises, but which

are meant for beings who are real as well as rational. Mr. Ritchie willfully strips himself of one of his chief means of understanding the world when he abstracts from his own reality, and is then puzzled to find that he must be either nothing or an unknowable thing-in-itself, if he be not a bundle of universal thought-relations. So he comes to the absurd conclusion that he is made up of the products of one of his own activities! Does not this remind one of the hero of Andersen's fairy tale, who became subservient to his shadow? And so it is not surprising that to one who holds that the individual is the real, his polemic[16] should appear a *σκιαμαχία* which cannot grasp the logical position of reality, and results only in a series of *hystera protera*.

For example, the individual is *not* 'everything which is called one'—things are called one because we attribute to them this extra-logical character of individuality. Nor is the individual what can be expressed by a single term—because the latter is only the nearest logic can get to expressing individuality. The individual is *not* a spiritual or thinking substance—because the whole category of substance rests upon and is abstracted from the individual, is an attempt thought makes to symbolise a substantivity, which its own adjectivity never properly expresses. The individual is more than a meeting-point of universals, because universals are not individuals, nor able to form one, however many of them meet together. But they never do meet in numbers sufficient for a quorum: the attempt to reduce the individuals to universals generates an infinite process, which is never equivalent to the finite individual.

It is not, then, any logical difficulty which compels us to modify the original sense of the assertion that individuality is an ultimate and definitely determined characteristic of reality, but the general flux of reality itself. The individual also is in process, and so individuality becomes a characteristic of which reality may be seen to have less or more. The individuality of a drop of water is very evanescent; the individuality of a schoolboy, or even of a mule, is often found to be a very stubborn fact. Once we have degrees, we can form a standard of individuality; and the scale may be prolonged inferentially beyond what is actually given. Individuality thereby becomes a hypothesis and an ideal, as well as a characteristic of reality. The atom of physics is such a hypothetical prolongation of the individual in one direction. *Monads* and the like, are prolongations in another, and, in the writer's opinion, a far more promising, direction. So we can come to say that an individual is lacking in individuality, i.e. shows this universal characteristic of reality too indistinctly, *seems* to lend himself too easily to 'explanation' by universals, *seems* to borrow too much from others, and the like.

But this in nowise trenches upon the value of individuality. It simply

postulates that we must learn to think of the individuality of the real as we have learned to think of its reality, not as a completed *being*, but as a *becoming*, i.e. *as being a process*. That which we designate by the term individuality is a varying and growing quantity, never wholly absent, but not always fully developed. At the one end of the process are the atoms—of which we can hardly discern the individuality. At the other end are—let us say the angels—individuals so perfectly individualised that, as mediaeval doctors taught, each would form a species by himself.

And with all deference to the *magni nominis umbra*, wherewith the Absolute has overshadowed the minds of philosophers, it seems to me that it is to some such conclusion as this that the course of science tends, rather than to a single merely rational 'universal law', from which all *existences* might be necessarily deduced by purely logical processes. Of the difficulties which the latter alternative involves Mr. Ritchie gives us a sample on page 95, which is valuable as containing a recognition by one of his school, belated and inadequate though that recognition be, of the gravity of questions that should have been considered before ever it was enunciated that reality was Thought. This is not the place to discuss what meaning, if any, can be attached to the dictum that 'Thought *realises* (does not this covertly reassert the distinction it pretends to explain away?) itself in its Other in order to return into itself,' but it may be remarked that Mr. Ritchie's 'dilemma', which drives him to such a solution, presents no difficulties to those who hold that the real is individual. For if the universe be constituted by the interactions of real individuals, some or all of whom display as *one* of their activities what we call 'thought', there is no such 'irrational' and 'alien' Other as troubles Mr. Ritchie; for what 'confronts thought' is merely the *whole* of which it is the *part* and the practical interpreter. Nor does thought itself ever claim more for itself than this, whether it be in its reference of every proposition to a reality beyond it, or in its recognition of the necessity that an activity presupposes a real being as its substrate, or in its ultimate foundation of all proof on the self-evident.

Thus it is only an infirmity of our reason, causing us to hypostasise abstractions, which leads us to speak of 'universal laws of nature', as if they were more than shorthand expressions for the habitual interactions of realities. But as the subtlety of our insight draws nearer to the subtlety of nature, the crudeness of our 'universal laws' begins to appear. We grow better able to appreciate the real individuality of things, and so substitute *specific* 'laws' for *general*. We no longer ascribe John Doe's death to the universal mortality of humanity, but get the doctor to tell us precisely why John Doe, and no other, died. As we know him better, we do not account for a friend's conduct 'because he is a man', but by a 'because he is *this* man'. In all our explanations we seek to get down to the particular, to do justice

to the individual peculiarity of things, to enlarge the part assigned to personal idiosyncrasy. On the other hand, the less we know about a thing the more confidently can we lump it together with others and the more general are the statements which the calculus of probabilities emboldens us to make about it. Hence though in the case of the lower orders of individuality such appreciation of the peculiar nature of each thing may still be an impracticable and indefinitely distant ideal, with regard to higher orders the principle is well established. We could hardly say with the poet that 'the proper study for mankind is man', if there were not, even in the meanest, an inexhaustible store of idiosyncratic reactions,—an individuality, in short, which becomes more and more conspicuous as we pass from the lower to the higher, and looks less and less like a combination of abstract universals! Hence, if we are to hazard any assertions concerning 'Omniscience', is it not clear that it could have no use for universals, and so far from regarding the individual as compounded of them, would apprehend the idiosyncrasy of each thing in its action, without the clumsy mediation of 'universal laws'?

In conclusion, then, let us contend against Mr. Ritchie that other views than his own of ultimate reality are tenable, that they answer the epistemological and metaphysical difficulties at least as well as his, and are at least as deserving of the name of idealism (if Berkeley retains any claim to the doctrine he discovered!), and that they are far concreter and in closer interaction with the sciences than a metempirical misconception like the Absolute. Nor need we blush to own that a view like ours would *not* prove the popular *Vorstellung* of 'persons' *wholly* false (even though it would tend to regard 'things' as being only 'persons' of a lower development of individuality), and so might prove more attractive to the 'plain man'. For it is possible to be 'critical', *without* disregarding either humanity or reality.

NOTES

1. From the *Philosophical Review* of September 1892. The late Professor D. G. Ritchie, whose premature demise I, in common with all his pupils, have not ceased to deplore, reprinted the article to which this is a reply in a volume of essays entitled *Darwin and Hegel* (1893), pp. 77-108.

2. Now Professor Pringle Pattison.

3. *Darwin and Hegel*, p. 102.

4. *Philosophical Review*, i. p. 142.

5. He does not even succeed in proving the unreality of dreams, by saying that they are not self-coherent nor follow in an intelligible sequence on the events of previous dreams. For their 'incoherence' is not, as a rule, intrinsic, nor anything that exists *for the dream consciousness* in the actual experiencing: it is an *ex post facto* judg-

ment (resting usually on an imperfect memory) which is passed on them in our waking life. But awaking involves a breach of continuity, and the consciousness which condemns the dream-experience is no longer the consciousness which experienced it. And are we so sure that the coherence of our 'waking' life would survive a similar breach of continuity, such as might be effected, e.g. by 'death' if we 'awake' after it? For comparison therefore with the intelligible sequence of successive dreams, we should require an intelligible sequence *in successive lives* to make the parallel complete. Unless, then, Mr. Ritchie has a transcendent knowledge of another life, whereby he judges our waking life to be real, because of its coherence and intelligibleness *from the standpoint of the former*, his comparison fails. It is true that we sometimes suspect our dreams while still dreaming (though as all dreams are 'near waking', we cannot be said to be 'nearer waking' then). But does not our waking life lie under the same suspicion on the same grounds? If it is permissible for once to appeal from the 'plain man' to the man of genius, is it not 'a mad, mad world, my masters'? Have not seers, prophets, and philosophers in all ages testified that our earthly life was but a dream? And if to these divinely-inspired 'dreamers' we owe all the religions that have swayed the lives of men, must not dreams and hallucinations be accounted most real—in Mr. Ritchie's 'ethical' sense?

6. Loc. cit. p. 80.

7. Loc. cit. p. 80.

8. As "Herakleitos" says (in *Mind!* p. 28), "is not the new of two things one, either itself false, or what renders all else false?"

9. *Princ. of Psych*. ii. 295.

10. *Darwin and Hegel*, pp. 82-83.

11. Else should we not have developed, e.g. an electric sense?

12. *Princ. of Psychology*, ii. 287.

13. *Darwin and Hegel*, p. 91.

14. *Darwin and Hegel*, p. 88.

15. I should now (1903) define 'essence' systematically in terms of purpose.

16. *Darwin and Hegel*, pp. 93-100.

10

THE PLACE OF PESSIMISM IN PHILOSOPHY

The aim of this essay is to show that logically Pessimism should be taken in a far wider and more fundamental sense than is commonly assigned to it, and that when this is done, it forms an attitude towards the ultimate questions of philosophy which is not susceptible of being resolved into any other, and cannot be refuted, but only accepted or rejected. It forms one of those ultimate alternatives the choice between which rests essentially upon an act of will.

In attempting to establish this view, it will be convenient to start by determining what we are to understand by the term Pessimism. It has been customary to subordinate the treatment of the subject too much to the particular views of representative pessimist writers, and to pay too little regard to the logical connection of the pessimist positions. Hence, a belief has become current that Pessimism might be summed up in the assertion that life was not worth living, because in it the pains predominated over the pleasures, and the whole question was thus reduced to one of the possibility and result of the hedonistic calculus. Now, it is true that the doctrines of Schopenhauer and von Hartmann lend themselves to such a narrowing

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Humanism: Philosophical Essays (London and New York: Macmillan, 1903), pp. 157–165.

of the issue, but I believe that it is possible to demonstrate the essential shallowness and logical inadequacy of a transition which is psychologically so easy as to have been made almost universally.

In the argument that life is not worth living because it involves an excess of pain, the second clause states a reason for the first, and, if it is proved, the conclusion inevitably follows. What has not been observed, however, is that even if it should *not* be proved, the conclusion may yet be true, because it may rest on other reasons. To argue that because one ground for a conclusion is unsound, the conclusion itself cannot be established, would evidently be nothing else than the familiar logical fallacy of denying the antecedent—until it has been shown that no other grounds are possible. But this is not the case here. The condemnation of life, which Pessimism essays to pronounce, does not necessarily rest on a single basis: it forms an attitude of thought which has been linked with the assertion of the predominance of pain by a mere accident of historical development. It is quite possible to condemn life on various grounds without holding it to be predominantly painful. It is possible to condemn it, not because it has too little pleasure, but because it has too little of the other ends which are recognised as good in themselves, because it has too little virtue or knowledge or beauty or duration. Life may shock us into a denial of its value also by its moral, its aesthetic, its intellectual deficiencies: it may seem so brief, so nauseatingly petty and contemptible that the game is not worth the candle. In all such cases the Pessimism cuts itself adrift from its supposed hedonist basis; and, even where the hedonist standard is retained, it need not be of an egoistic character. It may be sympathy with the misery of others that tempts us like the Buddha, like the Preacher in Thomson's *City of Dreadful Night*, to condemn life. Again, it is possible to argue, more subtly, that the unhappiness is the effect rather than the cause of the worthlessness of life. It is "not that life is valueless because it is unhappy, but that it is unhappy because it is valueless."[1]

But what enables man thus to apply to life the standards by which it is itself condemned? Nothing surely but the fact that he is capable of framing an ideal of worth, an ideal of something worth striving for and of holding it up to reality as a mirror in which to behold its deficiencies. It is because we systematise our valuations and so form ideal standards which alone bestow true value upon life, that we can condemn it because it nowhere allows us to attain perfect happiness or full knowledge or complete goodness or aesthetic harmony.

Now, it is evident that the deficiencies in life which the formation of those ideals enables us to detect will act as a potent stimulus to progress so long as the deficiencies seem comparatively small and the ideals appear attainable; if, however, we allow our ideals to outgrow our means of

reaching them, the chasm between them and the actual will become too deep to be bridged by hope; we shall despair of attaining our heart's desire and bitterly condemn the inadequacy of the actual. Thus Pessimism will ever hover like a dark cloud over the path of progress, ready to oppress with gloom alike the cowardice that despairs and the temerity that outstrips, prematurely and recklessly, the limitations of the practicable. It is a natural and almost inevitable phase in spiritual development, which results whenever any object of desire is found to be unattainable, and it has no exclusive affinity for the details of a pettifogging calculation of probable pleasures and pains. The sole reason why the question of Pessimism has mostly been debated on a hedonistic basis is because Happiness is the one ideal which is universally comprehended, which allures by its elusive glitter even the coarsest and most commonplace of men.

Having thus freed Pessimism from its entanglement in hedonistic disputes, we may proceed to determine its deepest nature. That nature would seem to consist in the denial of the *value* of life, in whatever terms and by whatever standards it may be formulated. If Pessimism springs from the experience of pain, it will deny the value of life because happiness is unattainable; if from moral indignation, because goodness is unattainable; if from aesthetic disgust, because beauty is unattainable; if from scepticism, because knowledge is unattainable. But in each case the value of life will be denied. It makes no difference to Pessimism whether a man despair because the world is so miserable, or so bad, or so hideous, or so inscrutable.

It follows from this that Pessimism is essentially a certain definite attitude towards the great and well-recognised class of judgments which are known as judgments of Value (*Werturteile*). Now, judgments of Value are possible about everything that is experienced, and are usually contrasted with judgments of Fact in that they do not inquire what a thing *is*, but what it *is worth*. And, like the primary judgments of Fact, alike whether they are ethical, aesthetical, or merely emotional or affective, they are primarily relative,—i.e. they assert that something has value for this purpose or that, for this aspect or that, of human nature. But just as the logical judgments must ultimately be accommodated in a coherent *system* of Truth, so the judgments of Value must ultimately all be referred to some supremely valuable end of action, or *Summum Bonum*. It will be possible then to estimate life as a Whole by this supreme standard of Value, and to discuss whether it satisfies it or not. If, as the outcome of such discussion, it shall appear that no coherent system can be framed, and that our valuations fail, their failure will create the situation on which Pessimism forms the emotional reaction.

Now as the result of such discussion, only three alternatives seem thinkable:

I. We may conclude that Life is adequate to the attainment of the supreme end of action, and that, consequently, it has value and is worth living. That is the position taken by every form of Optimism.

II. We may decide that Life is inadequate to meet the requirements of the standard applied to it; that, consequently, it has no value, and so is not worth living. That is the conclusion implied in every form of Pessimism.

III. We may object on principle to the attempt to answer the question, and contend that it should not be raised, arguing, e.g., that it does not follow from the fact that the value of everything in life may be determined, that we can determine the value of life as a whole. That may be called the *agnostic* or—with a reference to the Kantian denial of metaphysics and its analogous answer to the ultimate question of knowledge—the *critical* answer.

It is worth pointing out that these three modes of treating the ultimate question of Value correspond exactly to the ultimate modes of answering the question as to the ultimate Fact. We answer the final problem of theoretic knowledge also in three ways: (1) We may declare that existence is ultimately knowable, and explain its nature in more or less tentative systems of constructive metaphysics. (2) We may deny that in the end anything can be known. That is the sceptical attitude. (3) We may protest that human knowledge is not competent to solve its ultimate problems, and has no right to raise the question. That is the attitude of a '*Criticism*' which shrouds the ultimate metaphysical truth in the unfathomable obscurity of the Thing-in-itself, and yet Tantalus-like, is ever tormented by the phantom of a satisfaction which it believes to be hopelessly beyond its reach.

Whichever kind of ultimate question, then, we raise, whether that of the nature of ultimate facts or that of their valuation, three alternatives seem possible. But we can hardly avoid asking further whether they are all equally tenable. That is a difficult question which I cannot here discuss exhaustively. The proper academic thing to do would be, I suppose, either to evade an answer altogether or to decide in favour of the third alternative,—which is nearly as unsatisfactory as no answer at all,—and to finish up with a learned sneer at those who venture on 'dogmatic' conclusions. But, for once, I should like to dare to be dogmatic—at least to some extent—and to indicate some reasons at least for eliminating that third alternative.

For it seems to me that it reduces itself to the second, that the emotional value of 'no answer' is equivalent to an answer in the negative. Nor can I see why, if judgments of Value are rightly and properly made, they should not be applicable to the scheme of things as a whole. Certainly we make this assumption in the case of the judgments of intellectual Value,—i.e. in determining the value of our judgments of Fact. We assume that

because judgments of relative truth and falsity are made, the former can ultimately be fitted into a coherent and congruous system of Truth. That is, we recognise that in the end *Truth too is Value*,[2] and decline to predicate the 'truth' of any 'fact' which seems discordant with our system. Indeed it is by such a reference to logical values that we discriminate among the 'facts' which claim reality, and grant or refuse their application.

But if we are entitled to hold that there is Truth, and not merely judgments relatively true,—in other words, that is, that our logical valuations may be combined into a system, and that the ideal of Truth is valid of Reality and controls it,—why should we not be equally entitled to affirm similar validity for the ideals of Goodness and Happiness?[3] If Experience as a whole can be judged true or false, coherent or incoherent, why should it not be judged as a whole good or bad? At all events, it cannot be taken for granted, without attempt at argument, that human judgments of 'good' and 'bad' mean nothing to the whole, while (equally human) judgments of 'true' and 'false' may be appealed to to extract its inmost mysteries.[4]

And, moreover, the attempt to draw such a distinction would seem to break down even on the theoretic side. Granted that our theoretical account of the world had denied to all the judgments of Value, except those which use the predicates of 'true' and 'false', all ultimate significance, yet the fact would remain that such judgments were made and formed an integral part of life. They would remain, therefore, as an inexplicable factor in the world. And the more we realised the importance of this factor and the manner in which it permeates all our activities and directs even the intellect when it is seeking to deny it, the more doubtful should we become whether we had explained anything while this was left inexplicable. That is, we should inevitably be impelled towards scepticism on the theoretic side, and the practical reflex of scepticism is, as I have elsewhere shown, nothing else than Pessimism.[5]

It remains to ask whether the problems of Value or of Fact are more ultimate, and whether ultimately the one may not be subordinated to the other. I believe that they may and must, and that the antithesis between them is ultimately noxious because *all values are facts* and *all facts are values*, i.e. the product of one or other of our modes of valuation.[6]

But once more I can only very briefly indicate the ground for this conclusion. I shall here confine myself to observing that mere intellection is impotent (*ἡ διάνοια αὐτὴ οὐθὲν κινεῖ*), that the human mind is essentially purposive, that in its activity the judgments and ideals of Value supply the motive power to the judgments of Fact, and that, in the absence of anything valuable to be reached by them, no reason can be assigned why such judgments should be made. Hence if judgments of Fact, in spite of their illusory logical independence, seem psychologically to be rendered possible by and

rest on judgments of Value, does not the question—What is life worth?—become the most ultimate of all? Thus, with respect to this question, Optimism and Pessimism seem to supply the sole alternatives; nor does it seem feasible still further to reduce their multiplicity to unity by alleging any formal ground for subordinating Pessimism to Optimism. For, as we have seen, the same ideals which, while they are regarded as attainable, confer Value upon existence, once they are despaired of, plunge us into irremediable Pessimism. The most that can be said is that just as in logical judgments negation results from the failure of an affirmation, just as scepticism springs from a painfully achieved distrust of knowledge, so Pessimism is always *secondary*, and results from the breakdown of some optimistic scheme of Value. But even so it would seem to follow that Pessimism must be theoretically possible so long as such a scheme of Value can be felt to be inadequate and rejected; that is, so long as there persists a breach between the ideal and the actual.

What, then, is the practical conclusion to which the argument conducts us? It has vindicated for the question of Pessimism a position of paramount theoretic importance which would entail a far more serious treatment than is generally accorded to it in the teaching of Philosophy. And in view of the vast accumulations of uncoordinated and uncorrelated knowledge which Philosophy has in these days to think over and digest, in order that mankind may not utterly lose its bearings in the cosmos, philosophers may well shrink from taking up the burden of a problem of such magnitude and difficulty as that of Pessimism. But even if Philosophy could renounce its task of giving a rational account of every phase of experience, I should yet hesitate to hold that its acceptance of this problem would be pure loss, or in the end would prove detrimental to its true interests. To assume responsibility is potentially to acquire power, and no question is better calculated than this of Pessimism to make Philosophy a power in human life, for none can bring it into closer contact with the actual problems of men's lives. And does not the whole history of its past show that Philosophy has never been more flourishing and influential than in periods when it has seemed to make some response to the outcry of the human soul, to the question—What shall I do to be saved? If, then, Philosophy takes courage to do its duty, if it addresses itself to the question of the Value of Life and grapples with the Demon of Despair that besets the souls of many, who shall say that there is not still in store for it a career of unprecedented splendour among the forces that may mould the destinies of man?

NOTES

1. *Riddles of the Sphinx*, p. 99.
2. Cp. pp. 54-55.
3. Cp. pp. 260-261.
4. Cp. pp. 9-10.
5. *Riddles of Sphinx*, ch. iii. and iv.
6. The issue raised by Pragmatism may also be stated as being whether *logical* valuations alone shall be allowed to constitute 'facts', or whether this privilege may not, under the proper conditions, be extended to the rest. And however the question is decided, it is obvious that the conception of 'Truth' needs further scrutiny and can no longer be naïvely taken for granted.

11

VALUE

1. The nature of value.

Value is one of the last of the great philosophic topics to have received recognition, and even now the *Encyclopaedia Britannica* has an article only on economic value. Its discovery was probably the greatest philosophic achievement of the 19th cent., but opinions on the subject are not yet crystallized, and it is still one of the growing points of philosophy and one which seems likely to overshadow older issues. Reflexion at present commonly starts from the antithesis of 'fact' and 'value', and the difference between the standpoints of 'description' and 'appreciation'. It is widely held that consciousness of value differs in kind from consciousness of fact. It is posterior to the latter, and represents a reaction upon fact. It is an attitude assumed towards fact, a weighing of fact in relation to an agent, and his feelings, desires, interests, purposes, needs, and acts; and it expresses his appreciation (approbation) or reprobation (depreciation) of it in this relation. It follows (1) that a certain subjectivity, or, better, a relation to personality, is inherent in all values; (2) that values arise out of the mind's prac-

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Encyclopaedia of Religion and Ethics, vol. 12, ed. James Hastings (New York: Charles Scribner's Sons, 1926), pp. 584–589.

tical attitude, when it reacts upon stimulation, and that for a purely theoretic or contemplative view no values would exist; (3) that values are something super-added upon the other qualities of objects by the mind, in order to express their relation to its purpose and acts, and do not inhere in objects per se. Indeed they seem to be even more subjective, variable, and personal than the 'secondary' qualities of objects, and hence are often called 'tertiary' qualities. Nevertheless they are also objectified and projected into objects, when these are regarded as valuable objectively and per se, or when the 'validity' of actual valuations and of existing values is called in question. Hence 'superpersonal' or 'over-individual', and even 'eternal' and 'absolute', values are recognized by many philosophers. Moreover, the genesis of values and their relations to the objects of desire to which they refer, to the value feelings which accompany them, and the *valuation-processes* and value-judgments by which they are reached, instigate to a number of psychological inquiries, while their validity raises the deepest questions of epistemology, metaphysics, and religion. All the questions raised, moreover, are complex and contentious, and have had a history which it is not easy to unravel.

2. The history of the notion.—Historically the importance of the problem of value has been recognized very slowly, gradually, and grudgingly, and, moreover, its philosophic history is obscure, no early philosophy having made it central, or even expressly considered it. In the light of subsequent developments, however, we may trace its emergence to the Platonic doctrine (in *Republic*, vi.) of the Idea of Good. When Plato conceived the Good as the culmination of the Ideal world and as the principle which was to unify, systematize, and organize all the other 'forms', he was really putting 'value' above 'being', conceiving it as the supreme principle of explanation, and expressing the same thought as Lotze, when he declared that the beginning of metaphysics lies in ethics. For he was proposing to view all being teleologically, and to make its relation to a 'good' or end (an ethical notion) essential to its being. This was to affirm not only the objective validity of the 'tertiary' qualities, but also their supremacy over the others. Plato, however, did not himself develop this line of reflexion, nor succeed in inducing philosophers in general to investigate the problem of values. To the more naturalistic they seemed all too human to be attributed to ultimate reality. Spinoza's wholesale repudiation of their objectivity, at the end of bk. i. of his *Ethic*, is typical in this respect. The modern developments of the subject proceed from Kant, who, however, came upon it rather incidentally at the end of his philosophic career, and apprehended its significance very imperfectly. Kant's philosophizing had ended in the theoretic *impasse* that certain vitally essential beliefs (in God, freedom, and immortality) could not be scientifically justified. Yet they had to be presupposed,

he believed, for purposes of action; i.e., to carry on life it was necessary to act *as if* they were true. He devised therefore the notion of a practical postulate, which was to be practically imperative without being theoretically cogent, attaching it to the Moral Law of unconditional obligation, and endowing it with objects of 'faith', which were to be carefully distinguished from objects of knowledge. He thus established (1) a dualism between faith and knowledge which had obvious interest for theology, and (2) a supremacy of the practical over the theoretic reason, which was more fruitful, because less naive, than Plato's. The latter result tended to raise 'values' above 'facts', though the former at first masked this consequence, and it took subsequent philosophy a long time to overcome the Kantian dualism. Both, however, were prolific of further developments, divergent from the main line of post-Kantian speculation, which was too intellectualistic to notice that, just as the existence of fact must be conditioned for us by our knowledge, so our knowledge must in turn be conditioned by our interests and the prospective value of the objects of our cognitive endeavours. For a long time the investigation of value was carried on only in Germany, and even there progress was slow. The first (probably) to see that here was a new problem was F. E. Beneke (1797–1854), the only empirical psychologist among the German philosophers of his time, and hence a victim of Hegel's intolerance. Already in his *Grundlegung zur Physik der Sitten* (1821) he sees that, if the science of morals is practical, the notion of value lies at the root of it. He lays it down that the value which we attribute to a thing is determined by the pleasure which it has excited in us, and he makes the whole of ethics depend on feelings of value. In his *Grundlinien des natürlichen Systems der praktischen Philosophie* (1837–40) he makes it more explicit that valuations arise in the mind as reactions upon stimulations and depressions produced by the things of the external world, distinguishes between subjective and objective valuation (*Wertgebung*), and traces the growth of 'dispositions' to value and to desire. R. H. Lotze (1817–81) revived the Platonic idea that good ranks above being, wanting metaphysic to show that what *ought* to be conditions what *is* (*Metaphysik* of 1841), and that 'Nature is directed to the accomplishment of Good,'[1] and interpreted the 'ontological' proof of the existence of God as meaning that the totality of value cannot be utterly divorced from existence. In the endeavour to vindicate value he had the sympathy of his theological colleague at Göttingen, Albrecht Ritschl (1822–89), who agrees with him that the facts of concrete experience are the source of our general notions, and not, as Platonism has always held, pale reflexions of the latter. Hence personal experience is not deducible from metaphysics, but vice versa.[2] Ritschl, however, started rather from the Kantian dualism of faith and knowledge and tried to differentiate them still further. Faith he equipped

with distinct objects, those of religion—an independent method, which it shared with ethics and aesthetics—distinct from that of metaphysics and science, and formulated in value-judgments, different in kind from theoretical judgments, though equally capable of validity and certainty. It was therefore to misconstrue the essential meaning of religious affirmations to take them as expressions of theoretic insight rather than of moral trust. It is mainly to Ritschl that is due the current antithesis between value-judgments and judgments of fact, and the attempt to regard the sciences as different in kind according as they use the one or the other. Ritschl, however, recognized that this separation could not be really carried through. He observes:

'All continuous cognition of the things which excite sensation is not only accompanied but also guided by feeling' (pleasure-pain, as indicative of value for self, by way of enhancement or inhibition), and 'in so far as attention is necessary to attain the end of knowledge, will becomes the vehicle of the purpose of exact cognition; the proximate motive of will, however, is feeling, as expressing that a thing or an activity is worth desiring. . . . Value-judgments therefore are what determine all connected knowledge of the world, even when it is carried out in the most objective fashion. Attention during scientific observation . . . always declares that such knowledge has a value for him who exercises it.'[3]

This seems to render all theoretic judgments dependent on, and subordinate to, value-judgments; but Ritschl distinguishes between concomitant and independent value-judgments. In the sciences value-judgments accompany the theoretic, whereas 'independent value-judgments are all cognitions of moral ends or impediments thereto in so far as they excite moral pleasure or displeasure, or otherwise set the will in motion to appropriate goods or to ward off evils.' The religions also are composed of such independent value-judgments expressing man's attitude towards the world. From Ritschl's position it was easy to pass to that of W. Windelband (1848–1915), who, while sharply distinguishing between judgments and evaluations or judgments about judgments (*Beurteilungen*), emphasized that the latter are involved in every judgment in that it affirms or denies, approves or disapproves. Logic, therefore, becomes a science of values, a third normative science, along with ethics and aesthetics, and like them aims at the discovery of universally valid 'norms'. Philosophy becomes the critical study of the universally valid values; their recognition is its duty and its aim.[4] Windelband was followed by H. Rickert[5] and H. Münsterberg (1863–1916).[6] The Austrian schools of C. von Ehrenfels (1850–) and A. Meinong (1853–1920) devote themselves to the discussion of the objects and sorts of values, and their relation to desire and will, the laws of the valuation-process, and the accompanying feelings, and apply to all values the

economic law of marginal utility. The rise of pessimism and. the influence of Schopenhauer (1788–1860), by raising the question of the value of life as a whole, emphasized the importance of values. F. W. Nietzsche (1844–1900) effectively drew attention to the transformations of: values, and set himself, before he went mad, to bring about a 'transvaluation' (*Umwertung*) of all the accepted values. Josiah Royce (1848–1917) acclimatized the distinction between appreciation and description in the English-speaking world with his *Spirit of Modern Philosophy* (1892), and since then there has been a good deal of (rather unsystematic) discussion of the problems of value, especially in America, though the intellectualistic bias of the dominant 'idealism' has been unfavourable to it. The pragmatists, however, were glad to recognize the presence of valuations in cognitive processes, as a proof of the fictitious nature of 'pure' thought and 'absolute' truth. They emphasize the human, purposive, and personal character of value, tend to regard all values as relative, primarily to the particular situation which is valued, and declare the existence and efficacy of values to be plain, empirical facts.

3. Sorts and criteria of value.—As the result of this historical development it is generally admitted that distinct species of value exist, though there is no agreement as to what they are. However, it is clear that several sciences have been specialized to study them. Thus (1) *economic* value has long been recognized as a fundamental notion of political economy, which, ever since Adam Smith, has divided it into value in use, i.e. the utility of objects for human purposes, or, as J. S. Mill said, their 'capacity to satisfy a desire or serve a purpose', and value in exchange, i.e. their power to induce or compel people to pay (other valuables) for the use of them. The former is simply teleological value, which refers to the relation of means and end; the latter arises when an object is not only useful but also difficult to procure, and is the special concern of economics (*q.v.*).

(2) That *ethics* deals with values is also agreed, though there is much dispute as to what the specific ethical values are and how they are related.

(3) *Aesthetic* values are also beyond dispute.

(4) *Pleasure* must be regarded as a positive and pain (unpleasantness) as a negative value, since even the most ascetic do not really succeed in holding that pleasure is, or in denying that pain is, as such bad. The opposite doctrine, that all values are ultimately reducible to pleasure-pain, is commoner, but need not disturb the classification of values. For, even if the question whether objects are valuable because they give pleasure or give pleasure because they are desired (valued) were decided in favour of the former alternative, it would still be true that the other values are at least relatively independent. Consciousness of value does not directly imply consciousness of pleasure-pain, nor vary concomitantly with it; e.g., in con-

scious wrongdoing an ethical value which is felt not as pleasant, but as painful, is nevertheless recognized. Similarly the aesthetic value of a work of art may be recognized, which is yet declared to give no pleasure and to leave the spectator 'cold'.

(5) It has been mentioned that, according to the school of Ritschl, the objects of the *religious* consciousness are really values, and affirmations about them are essentially value-judgments. And, though other theologians dissent from it, this view gets considerable support both from the psychology of religion, which interprets religious beliefs as expressions of spiritual needs, and from every theological admission that faith, as well as reason, is operative in the apprehension of religious truth.

(6) There are good reasons for recognizing the distinctiveness of *biological* or *survival*-values. For they are capable of objective scientific study, and cannot be simply represented, as Herbert Spencer thought, by the hedonic values. Pleasures are not always conducive to life, nor are all pains evil. The relations of survival to pleasure-pain are complex; so are its relations to the ethical values, as is vividly brought out by the ethics of pessimism. Moreover, the survival-values enter into all other values: the value of every being, belief, and institution is affected by its survival-value—between the limits of such a high degree of positive value as to compel universal assent and so high a negative value as to entail complete extinction and universal reprobation.

(7) Several schools of philosophy hold that logic is the science of *cognitive* values, and that truth is the positive, error the negative, value; and this treatment is often implied also where it is not avowed. It would seem to be borne out by the far-reaching analogy between logic, ethics, and aesthetics as 'normative' sciences, and proved by the conformity of logic with the criteria generally used to distinguish values.

As criteria two primary oppositions appear to be used: (1) that between existence and value, the 'is' and the 'ought'. Even though there are in man natural tendencies to approve of what has succeeded in establishing itself, and to bring into being what is considered worthy of being—i.e. both to realize ideals and to idealize the actual—there remains a considerable discrepancy between the existent and the valuable. It cannot (ordinarily) be argued that, because a thing exists, or that, because it is valuable, it must exist. What is need not be what ought to be, nor need what ought to be exist. Hence the 'laws' of a science of values are not natural uniformities, but 'norms', i.e. precepts or imperatives; they formulate not what actually does happen, but what ought to happen 'normally', i.e. if the persons concerned recognize and submit to the order proper to the subject.

(2) Values appear to be positive and negative. As they express the attitude of a subject to an object, they indicate the acceptance or rejection, pur-

suit or avoidance, of the former, the attractiveness or repulsiveness of the latter. They occur therefore in couples of antithetical predicates, both admitting of degrees of intensity. Hence values may compensate, cancel, or neutralize each other, and the final value of an object may vary according to the balance between its positive and negative value, or become practically *nil*. A state of consciousness which is 'neutral', and an object which is 'indifferent', are cases of such zero values.

(3) All values are disputable. They involve a relation to a valuer whose valuation need not be correct, and need not be accepted. The allegation of a. value, therefore, is not equivalent to its validity. All values are to be understood as primarily claims to value, which may be allowed, disallowed, or reversed, when other values are considered. In some cases such reversal is normal: thus, if A and B are enemies or have opposite interests, what is 'good' for A is normally 'bad' for B, and vice versa.

With the aid of these criteria the following kinds of value can now be enumerated. (1) *Hedonic* values are the pleasant (positive) and the unpleasant or painful (negative). (2) *Aesthetic* values are the beautiful (positive) and the ugly (negative); also the attractive-repulsive, the fitting-improper, the noble-vulgar, the elegant-coarse, and many others. (3) *Utility* values are the good (positive) and the bad (negative); also the useful-useless. These last, though they properly have reference to the relation of means and. ends ('the good '), naturally pass over into ethics, when this science is conceived 'teleologically', i.e.. as the science of the final end or supreme good. (4) Other *ethical* values, relative to other conceptions of ethics, are marked by the oppositions of 'good and 'evil', 'right' and 'wrong', 'ought' and 'ought not'. 'Good' and 'bad' seem sometimes to be used absolutely in ethics, but this usage hardly proves the existence of 'absolute' values. On closer inspection, the meaning is seen to be good or bad *for* the ethical end, however that is conceived. (5) *Religions* conceptions reveal their character as values by the frequency of such dualistic antitheses as God-devil, salvation-damnation, election reprobation, holy-sinful, sacred-profane; also by the frequency with which religious arguments turn out to be postulates of faith. (6) *Logic* falls into line with the values 'true' and 'false', 'truth' and 'error'. These also claim to be absolute; but whether what is believed true is so may be disputed, just as whether what is believed good, or right, or beautiful, or valuable, or conducive to survival actually has the value which it claims. Even what is felt as pleasant is not always conceded to be a 'true' pleasure, nor is every 'imaginary' pain said to be 'real'. This illustrates also a further confirmation of the whole doctrine, that the various value-predicates are freely transferable from one species of value to another.

4. Value and fact.—The recognition of logic as a science of values

entails a radical revision of the antitheses between fact and value, existence and value, the 'theoretic' and the 'practical'. If all 'truths' are values, there can be no absolute separation of the practical, the sphere of values, from the theoretic, the sphere of facts. Facts, being the objects of truths, must all imply values, and it must be vain to search for any existence which is wholly free from valuations. Now this is precisely what history shows. (1) The search for 'true reality' in pure and unadulterated 'fact', uncontaminated by any work of the mind, in an unconditional datum which has merely to be recognized, has always been vain. Only the moral to be drawn is not, as idealism supposes, that reality is the work of 'pure thought'. The thought which cannot be rooted out is a valuing thought, which is aiming at ends and selecting means, and accepting, rejecting, and variously manipulating the data presented to it in the whole process of 'recognizing' reality. Thus the absolute antithesis between fact and value collapses, because fact without value cannot be found. (2) The very fact that it is considered so desirable to find it proves that it is impossible to do so. For the importance attributed to the discovery of fact, and the eulogistic sense in which 'reality' is opposed to 'appearance' or 'illusion', are, in fact, values. This comes out especially in doctrines about the 'degrees of reality', which are plainly degrees of value, or about the distinction between 'reality' and 'existence'. (3) It is not psychologically possible to reach any 'fact', except by a process permeated throughout by values, viz. a purposive endeavour to attain an end ('good') by a choice of the 'right' means, which implies selective attention, preferences for what seems valuable, and the influence of concomitant value-feelings and of a variety of prejudices and forms of bias. (4) Lastly, it seems a conclusive logical reason for holding that every 'fact' alleged must contain a latent value, that it claims not only to be 'true' but also implicitly to be better than any other judgment it was possible to make under the circumstances. Its maker was probably aware of this, and consciously preferred it to all alternatives that occurred to him; but, even where he did not think of any, they remain logically conceivable, and hence the actual judgment is only justifiable by its logical claim to be the best. Hence the value-relation and attitude can never be eradicated from even the merest and most stubborn 'fact'.

Nor, conversely, can a recognition of fact be wholly eliminated from knowledge. Pure value exists as little as pure fact. It would be pure fancy or sheer postulation, and neither fancies nor postulates are elaborated without regard to fact. They are made to be realized, and, when they are recognized as impossible, their value is destroyed or impaired. It is said to be 'no use' to postulate the impossible or to cherish utterly unrealizable ideals. This recognition of fact, however, is always relative to the existing state of knowledge, and may be modified as knowledge grows. Knowers are

often conscious of this, and assume their facts for the purposes of an inquiry or a science, hypothetically and experimentally. Hence it is not to be supposed that what is taken as fact, and formally is 'fact', must remain so. It may turn out to be only a methodologically convenient 'fiction'. In general it may be concluded that, since values inhere in all the 'facts' that are recognized as such, they are themselves facts, and that the antithesis between values and facts cannot be made absolute. Values are not simply fortuitous and gratuitous additions to facts, which are merely subjective and should be eliminated by strict science, but are essential to cognitive process and compatible with any sort and degree of objectivity. Facts too are always reactions—upon prior facts—and are generated by their evaluation; and, moreover, these prior facts may have been merely hypothetical constructs recommended by their prospective value.

5. Value and existence.—It would seem to follow from the relations between value and fact that values cannot be denied existence in any world that can exist for man, and. this in several senses. (1) They are operative in and on human minds, and find expression in human acts and embodiment in human institutions; (2) they can occur in, and relatively to, any universe of diction, however fanciful; (3) hence also in ideals and fictions, both of which are sometimes said to be incapable of real existence, and cited as objections to the connexion of values with existence. But both must be so related to real existence as to be applicable to it and to conduce to its successful manipulation. Otherwise they become false ideals and futile fictions. Also an ideal which is recognized as impossible appears to lose *pro tanto* its obligatoriness and power of attraction. 'Ultra posse nemo obligatur.'

Whether it is possible to infer the existence of a valuable object from a recognition of its value alone is a question of great importance for religion. For the objects of the religious consciousness appear to be largely or wholly of this kind, and the religious 'proofs' of their existence to be ultimately such inferences. They are, moreover, stubbornly persisted in, in spite of the protests of common sense against their validity, and have an important function also in the other sciences, in which they are not recognized so openly, but masquerade as 'axioms' and 'a priori truths'. In discussing then in its generality this inference from value to existence, we should remember that all values are initially claims, which may fail of validation; hence it will hardly seem valid to rest the reality of the valuable objects on what may be an unsound claim, viz. on the demand for them alone, unsupported and unconfirmed by experience. Logically they are to start with nothing but postulates. It may be legitimate to take them as methodological principles, but even then they must be regarded as hypotheses to be assumed experimentally, until they have adequately approved and verified themselves by

their applications to the actual problems which they concern. For example, it may be legitimate to extract from the actual pursuit of ends and of happiness by men the methodological assumptions that all things are to be regarded as tending towards a supreme all-embracing end and towards universal happiness; but can it be maintained that *therefore* such an end is actually operative, or that perfect happiness (i.e. everlasting and unalloyed pleasure unaccompanied by pain) is possible? To justify such inferences two further assumptions would seem to be required, viz. that the whole of reality is conformable with human nature and bound to satisfy its demands. Now these assumptions, traditionally described as the axiom of the ultimate rationality of existence, are evidently themselves nothing but values for which existence is postulated, and, if they are to be admitted as axiomatic truths on their own assurance, it is difficult to see what Limits can be set to the postulation of objects of desire. Even as it is, methodological postulates ire given great, and perhaps undue, facilities in verifying themselves, because, so long as they work at all, their failures can always be ascribed to the imperfection of our knowledge, and so are not counted against them. Thus nothing short of total failure to predict the course of events need lead us to abandon the postulate of their 'causal connexion'. Hence the testing of a value-postulate always, in a sense, presupposes its truth—though not in any sense that makes this presupposition alone a sufficient reason for regarding it as absolutely true; still it is better to get a postulated value confirmed by experience than to accept the mere recognition of value as an adequate guarantee of its existence. What kinds and amounts of experimental confirmation are to be considered adequate to verify the existence of postulated objects of value will naturally depend on the specific subject-matter, and, as in addition the various values sought and got need not be in harmony with each other, and some may prefer one sort and others another, and as, moreover, the relevance of some of the values found to the existences to be proved may be called in question, opinions will probably long continue to differ on these matters.

6. Value and validity.—It follows from the above that the transition from value to validity is by no means a matter of course, though this is often assumed, both as regards ethical and as regards logical values. In both cases the motive is the difficulty of validating value-claims, which is a long, and indeed theoretically an unending, process. Hence the temptation to allege absolute and self-proving values which are independent of their working in experience. The absolute values alleged, however, are only formal claims, as comes out very clearly in Kant's account of the absolute value of personality and of the 'law' of duty. The declaration that every person should be treated as an end in himself is merely a recognition of the formal claim that every person makes to be so treated (even though he never is so treated, and

apparently could not be, in the actual order of things), which may serve as a definition of personality; while the moral 'law', that duty should be unconditionally fulfilled, is merely a paraphrase of the obligatoriness of the ought-value; in neither case is any light thrown on the questions how, concretely, any one should be treated, or what, concretely, his 'duties' are. Similarly every judgment formally claims to be true, absolutely and unconditionally, and, as it mentions no restrictions to its claim, it may be said to be so; but, as this is so, however false a judgment may turn out to be, it establishes no presumption in favour of its real truth. Thus it is quite possible, and indeed necessary, to inquire whether the values claimed are really possessed, and to question the validity of the values actually recognized. This indeed is one of the chief occupations of a critical philosophy. It means that the problem of value occurs also in the sphere of values; the antithesis of 'ought' and 'is', which was supposed to differentiate value and fact, arises again over the value of values, when they are taken as facts for the purpose of assessing their value. The explanation perhaps is that error and failure are possible in all human operations, and hence also in the estimation of values. The values which are claimed are subject to revision and correction, and, if it is decided that they are, but ought not to be, they can be called either 'false' or 'wrong'; for it is intrinsically as legitimate to use the value predicates of logic as those of ethics to describe their failure.

The difficulty of determining the precise connexion between value and validity is, however, largely due to the obscurity of the notion of validity itself. We are accustomed to regard validity at first as an absolute and (theoretically) unquestionable degree of value, and to illustrate it from the ideal validity of logic and of ethics. On examination, however, this sense of validity appears to be merely formal, and to be nugatory or null as a guarantee of real value. For in both these sciences the valid and the valuable fall apart. Neither is he valuable necessarily valid, nor is the valid necessarily valuable. Every moral order makes extensive use of inferior moral motives; every science uses probable but invalid reasonings. Whether the ideal validity is ever reached, or would be valuable if it were, seems more than doubtful. Hence it seems proper to reduce the meaning of validity to a high, or generally recognized and practically indisputable, degree of value, and to make value determine validity, and not validity value.

7. Value and valuation.—If value is conferred upon an object by a personal attitude towards it, it is clear that all objects can be valued, by being included in a valuation-process. Many objects, however, are so variously valued according to circumstances, or are so rarely important enough to be valued at all, that they are conceived as neutral or indifferent *per se*. So it is only if an object is constantly valued in a particular way that its value adheres to it and it comes to seem intrinsically valuable. For it then eman-

cipates itself from the personal valuation and makes its valuation look like a mere recognition of an already existing value. Values acquire objectivity in other ways also. Thus the personal reaction expressed in a value-judgment carries a formal claim to universality, since every one initially regards himself as the measure of all things, until he is instructed by the dissent of others. This claim therefore maintains itself only while it is not disputed, and should not be taken as more than methodological. By the comparison of value-judgments it appears that different persons value very differently; hence many value-judgments, being, in dispute, are regarded as 'merely subjective'. About others many or all are found to agree, and these may hereby acquire every degree of 'objectivity'. Thus objects which have obtained social recognition as valuable come to rank as objective values. A value that has risen to be objective may then maintain itself without continuing to be valued, and even though, under the circumstances, its value may have been converted into the opposite. Thus, once a literary work is ranked as a 'classic', its value remains uncontested, even though few care for it or even read it, except for examination purposes; and King Midas no doubt continued to think gold most valuable in spite of his inability to digest it. It cannot always be assumed therefore that, because a value is current and is recognized, it is fully functional, any more than that it is right.

There are then plenty of objective values, which any valuer encounters and has to recognize as given. But they may nevertheless all be conceived as products of valuation-processes, and as presupposing prior value-judgments. For when the valuation of an object has been repeated and has grown familiar, the conscious and reflective value-judgment becomes superfluous, and an immediate apprehension of value results, just as immediate perception supersedes judgment about familiar objects of cognition. In other cases, it is true, this process does not occur in the history of the individual, but it can then be traced in that of the race, whose achievements the individual inherits. An object may, e.g., be apprehended as pleasant, beautiful, or right, without a judgment or process of valuation; but the immediacy of its value-claim is no bar to any inquiry into why it is so valued, how it has come to be so, and whether it ought to be so, and really is as beautiful, right, or pleasant as it seems to be. Hence the values which are psychically data, and psychologically immediate, may always be logically mediated and made objects of valuation-processes and explicit value-judgments. They then function as facts to be evaluated.

8. Transvaluations.—The process of reflective reconsideration of given values continually leads to changes in their status. Hence 'transvaluations' must be regarded as normal and entirely legitimate occurrences in every sphere of values, though they are not everywhere as socially prominent as in the annual changes of the fashions.

As Dewey says, 'All valuation is in some degree a revaluation. Nietzsche would probably not have made so much of a sensation, but he would have been within the limits of wisdom, if he confined himself to the assertion that all judgment, in the degree in which it is critically intelligent, is a transvaluation of prior values'.[7]

One sufficient reason for this is that, strictly speaking, it is not psychologically possible to repeat a valuation. The second time the valuation has lost its novelty, and the delight of discovery is gone; it is acquiring familiarity and beginning to breed contempt or indifference; or again it is growing easier, and the resistance to it is diminishing, as habituation renders it less repugnant. Moreover, valuations necessarily vary according to the changes in the organic needs which condition them. His tenth penny bun will neither taste as good nor be valued as highly by a hungry boy as his first. No doubt these changes in value are little noticed because many of them are slight, unimportant, and ephemeral; but they would anyhow be obscured by the general bias in favour of stability. Unless it is discounted, it will hardly be recognized that stable values are exceptions rather than the rule. They bulk large because they are attended to and selected. Their stability is always more or less a construction for methodological purposes, like the extraction of stable objects out of the flux of happenings. It is always to some extent a fiction, because it is never absolute, and because there are no eternal values, none that endure unchanged and untransformed by new valuations for ever, unless it be life itself—so long as that lasts. It may even become a dangerous illusion, if its character is not understood, and it is made an obstacle to salutary and necessary changes. In such changes the old values always condemn the new, and vice versa, often with tragic results. Transvaluations are the stuff out of which heroes and martyrs of 'reform' or 'loyalty' are made, at every step in human progress. The question of what is the right value is unanswerable for the time being, because it is precisely the question which is being fought out. But we can predict that such changes will always be opposed, for there is always a conservative and a progressive party with respect to any change. These party attitudes are essentially valuations, as any one can discover from himself, if he is open-minded, and also distracted, enough to have a 'cross-bench mind' and to feel the force of both the opposite contentions. Nor are these the only conflicts which may lead to a change of values. Every society, and nearly every soul, is full of conflicts between opposing valuations, and any variation in their relative strengths may entail a change in values. The chief agency which blinds us to these transvaluations is the stability of words; for these change their form much less rapidly than their meaning.

9. Conclusions.—The above survey of the problems of value may be

regarded as confirming most of the preliminary points noticed in §1. The philosophic importance of the subject has been attested by the great variety and universal prevalence of values. The provisional definition of value as essentially a personal attitude, as a recognition of the supremacy of the category of personality, has maintained itself and proved a clue to the labyrinth of values. It also renders somewhat nugatory the psychological debates of the schools of Meinong and von Ehrenfels as to whether values are rooted in feeling, will, or desire. For a personal attitude is a concern of the whole man and not of psychological abstractions. If, however, it is thought necessary to pick one among such psychological phrases, it is probably best to say that value is a personal attitude, of welcome or the reverse, towards an object of interest. For few are likely to dispute that 'interests' are relative to personality. This relativity, however, is not to be regarded as importing any objectionable subjectivity into values, just because it proves to be the source also of their objectivity. For it turns out that all objects are pervaded by values and constituted for man by valuations, and hence their avowed values may just as rightfully belong to them as the values latent in their other qualities. Accordingly the opposition between value and fact breaks down. 'Facts' are themselves values, values established in the endeavour to analyse out the factor of givenness contained in experience, and presupposing purposive manipulation of apparent 'facts'. They are thus 'made' things, though they are not made out of nothing, but out of previously recognized facts which are subjected to criticism to determine what they 'really are'. Values are also acts in so far as they presuppose valuations, purposive manipulations of data, and judgments; also in that they have prospective reference to action, and are intended to guide it. Accordingly, the belief that values belong to the practical side of life is well founded, and even truer than it seemed; for in ultimate analysis logic also is a science of values. Its 'theoretic' values presuppose purposes, selections, choices, and judgments which are acts, and do not differ in kind from those which are openly 'practical'. It is clear also that the notion of value as something gratuitously superadded upon fact must be modified, if it is interpreted as meaning that values are something unreal, artificial, and optional. Reality in its fullness contains and exhibits values, and they are ejected from it only by an effort of abstraction, which is relative to certain restricted purposes, and is never quite successful. Values therefore are not to be regarded as gratuitous additions to reality, made out of the superfluity of human perversity, but as its highest qualities and the culminating points of its significance for us.

Literature—The literature is extensive but scattered, and often raises the questions about value only incidentally and in connexion with other problems. The historical part of it has been mentioned above in §2; the modern

is still largely contained in periodicals, in English especially in the *Journal of Philosophy and Psychology* (from 1915), In discussions conducted between W. M. Urban (vol. xiii. [1916] nos. 17, 25, xiv. [1917] 12, 26, xv. [1918] 15), J. Dewey (xii. [1915] 19, xv. 10), H. W. Schneider (xiv. 6, 26), R. B. Perry (xiv. 7), D. W. Fisher (xiv. 21), F. C. S. Schiller (xii. 25, xv. 19), W. R. Wells (xv. 18), etc. In *Mind* artt. by S. Alexander (new ser., i. [1892] 31 ff.), J. S. Mackenzie (iv. [1895] 425 ff.), O. C. Quick (xix. [1910] 218 ff.), may be mentioned. From the German literature on 'axiology', A. Meinong, *Psychologisch-ethische Untersuchungen zur Werttheorie*, Gras, 1894, *Ueber Annahmen*, Leipzig, 1902; C. von Ehrenfels, *System der Werttheorie*, 2 vols., do. 1897–98; J. C. Kreibig, *Psychologische Grundlegung eines Systems der Wertttheorie*, Vienna, 1902; G. Simmel, *Einleitung in die Moralwissenschaft*, 2 vols., Berlin, 1892–93, and *Philosophie des Geldes*, Leipzig, 1900; H. Maier, *Psychologie des emotionalen Denkens*, Tübingen, 1908, must be mentioned. In English W. M. Urban, *Valuation: its Nature and Laws*, London, 1909, is as yet the only work expressly and solely devoted to the theory of values, but the importance of the subject is being recognized in all quarters. Cf. B. Bosanquet's Gifford Lectures, *The Principle of Individuality and Value*, London, 1912, and *The Value and Destiny of the Individual*, do. 1913, for the absolutist attitude towards the subject; H. W. Stuart, in *Studies in Logical Theory*, by J. Dewey and others, Chicago, 1903, and in *Creative Intelligence*, New York, 1917; H. M. Kallen, 'Value and Existence in Philosophy, Art and Religion', ib.; F. C. S. Schiller, *passim*, esp. in *Humanism*, London, 1912, chs. i., iii., and ix., for the pragmatist; also J. Ward, *Psychological Principles*, Cambridge, 1918, ch. xvi. §2; and C. T. H. Walker, *The Construction of the World in Terms of Fact and Value*, Oxford, 1919.

NOTES

1. *Microcosmus*, Eng. tr., Edinburgh, 1894, i. 396.
2. *Theologie und Metaphysik*, Bonn, 1881, pp. 32-40.
3. *Die christliche Lehre von der Rechtfertigung und Versöhnung*, Bonn, 1895–1900, iii. 194 f., Eng. tr., Edinburgh, 1900, p. 204.
4. *Präludien*, Freiburg i. Br., 1884.
5. *Der Gegenstand der Erkenntnis*, Tübingen, 1904.
6. *The Eternal Values*, Boston and London, 1908.
7. *Essays in Experimental Logic*, London, 1916, p. 386.

12

CREATION, EMERGENCE, NOVELTY

Seeing that philosophic discussion turns so largely on the meaning of words, apology for the almost entirely lexicographical character of this paper is hardly needed. Indeed, until philosophers show themselves sufficiently capable of co-operation to get together to appoint a Committee on Nomenclature, like the scientists, which may curb the licence of individuals in misusing old words and coining new ones of repulsive aspect and inferior value, it is something very like a duty to protest from time to time against the proceedings of those who try seriously to live up to the old jest that philosophy is nothing but the systematic misuse of a terminology devised expressly for this purpose.

§1

To begin with, let us clear the way for our discussion by disposing of the word 'evolution'. It is, of course, one of the most popular of our catchwords, but has been excluded from my title because of a vagueness, ambi-

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Must Philosophers Disagree? And Other Essays in Popular Philosophy (London and New York: Macmillan, 1934), pp. 203–213.

guity, and ineptitude which have become so notorious that no one should have a good word to say for it. True, it has spread itself, like a weed, over the whole intellectual landscape, and is now liable to crop up nearly everywhere. But that is because it is attributed, very much at random, to pretty nearly everything, and is by no means a justification of current usage.

'Evolution' is really an outstanding example of a cuckoo word with very disreputable habits. It began its career by usurping the meaning of its original competitor 'epigenesis', without quite dropping its own, and in consequence is now commonly taken as *affirming* the implication of *novelty*, which it was constructed to *deny*. For 'evolution' was originally a hypothesis about the development (a similarly question-begging word!) of organisms *intended to slur over and conceal the occurrence of novelty*. It insinuated that nothing could be 'evolved' ('unfolded') but what had been involved ('wrapped up') from the beginning. But this hypothesis was used as a theory of descent. It was applied, with some success, to an actual process of nature, to the history of life on earth, because this had, or seemed to have to man's interested eyes, a definite *trend*. This trend our optimism, or conceit, interpreted as an *upward* one, as a progress entailing an *increase in value*, regardless of the vast masses of stagnation and the multitudinous cases of degeneration also exemplified in organic history, and unhindered by the reflection that the history of events on earth, or even in the whole solar system, afforded an absurdly narrow basis for inferences about cosmic evolution as a whole. Thus was the *progressiveness* latent in the notion of 'epigenesis' craftily transferred to 'evolution'.

When it was, tardily, observed that the actual course of biological history, when more closely scrutinized, by no means always supported the belief that the process was a progress, in whatever sense one might be pleased to take 'progress', the big claims initially made on behalf of 'evolution' had, of course, to be modified. But instead of restricting the term 'evolution' to a fairly definite biological process scientists pursued the reprehensible and improper policy of further extending, and diluting, its meaning. So it was made to include such diverse processes as biological history, the development of a star or a galaxy, and even the 'evolution' of matter itself. These extended uses have, however, reacted upon biological evolution; so it is now becoming clear that such progress as has occurred in the history of life must be conceived *not* as due to any 'law' or even 'force' guaranteeing its continuance and significance, but at most as a complex *resultant* of many historical factors or conditions, which has, in this one case of our earth, ended in a show of progress. Thus we are not, strictly, entitled to regard biological 'evolution' as more than a *coincidence*, which has quite the air of a lucky accident.

The belief that 'evolution' in the sense of progress would continue has

thereby become an *act of faith*, which the past could engender, but could not prove. Logically it reduces to a *probability*, the strength of which it is hard to estimate, but which will loom large only in the eye of faith. It is plain also that we are *not* entitled to assert the reality of any universal evolution as a 'law' of Nature. The most we can say is that *if* we are *right* in recognizing a certain trend in history as change for the better, despite the awkward fact that we must needs be strongly biased in favour of a history which has generated *us*, and *if* we are *right* in hoping that this trend will continue, on the whole, to prevail over opposing tendencies leading in other directions, biological history can be viewed as, on the whole, progressive. Even then we shall have to be constantly on our guard against the insidious temptation of conceiving 'progress' circularly, as whatever 'evolution' tends to. This seems an easy way of establishing the reality of 'progress', but it is merely verbal and utterly fallacious.

Furthermore, the implications of the fact that biological history is only an infinitesimal fragment of the total course of events must be fully recognized. A great act of faith was needed to construe biological history as, at heart, progressive; a second and more stupendous act of faith is needed for the leap from our little earth to an 'evolution' of solar systems and galaxies, nay, of 'matter' itself with all its 'laws' of nature. *A fortiori*, therefore, biological history cannot prove that the notion of progressive process is transferable to the whole becoming of the cosmos. It is a miracle of anthropomorphic audacity that it has so much as suggested it!

The moment, however, we try to effect this transfer we find, to our dismay, that while cosmic history does permit itself to be regarded as a process, it indicates a process of a totally different sort. We at once encounter the Second Law of Thermodynamics, which is much more fundamental and better established than any 'law' of 'evolution', and has much better claims to be regarded as a law. It implies, apparently, a very definite, and quite inexorable, trend in events, probably a *beginning* (if, that is, the universe is finite, and if it is not no one can say anything definite about it *as a whole*—simply because *it isn't a whole*!), and certainly an end, in a state of complete degradation or dissipation of energy which seems as unlike anything we can regard as perfection and life as could well be imagined.[1]

If, therefore, the Second Law of Thermodynamics holds, all the changes in the universe tend towards a maximum of 'entropy'; which, being interpreted, simply means that the universe is running down, and coming to a bad end.

Naturally many of our physicists are human enough not to relish this prospect; they are at present searching (with little success) the most distant regions of stellar space for traces of a process that will mean a possibility of

reversing the trend of change and of a regeneration of matter and energy, and so will restore stability (if not progressiveness) to the cosmos.

Curiously enough, however, there is a certain doubt, based on facts much nearer home, whether this law does hold universally. For life (which we know to exist only on our little earth) appears to have a power (very limited at present) of *reversing* the cosmic trend. Living beings, no doubt, spend energy, like everything else; but they do not seem always to *waste* it. This means that although the stream of energy flowing through the physical changes of life tends ever to a lower level, it can yet be used to build up the structures of a *higher* life. Moreover, in virtue of the process we call 'learning', psychic life seems to be capable of storing up and accumulating the knowledge which is power, to a limited extent. This tendency of life is manifested from the beginning: for some living beings, to wit the plants possessing chlorophyll, are thereby enabled to *synthesize* organic compounds, instead of breaking them up into simpler forms of matter, while others, to wit 'nitrifying bacilli', are able to draw nitrogen from the air and to render it available as a food. All these processes presuppose a supply of energy obtained from sunlight; but they constitute curious facts which may indicate that there are really *two* antithetical, or even antagonistic, processes going on together in the universe, and which go to discredit the attempts to interpret it monistically.

We should conclude, therefore, that it is a gross abuse of language and confusion of thought to apply the same word 'evolution' indiscriminately to *both* processes, those of physical and those of biological history, and that so long as this confusion is current it is better to avoid the word altogether.

§2

Let us therefore consider 'creation' next. This is a word for a notion which the human mind has evidently had great difficulty in evolving. Etymology shows that different languages have proceeded from different starting-points in arriving at it, and that many have never been able to arrive at it at all. Thus the English 'creation' comes from a Latin root which meant to generate, a sense which 'procreation' still retains. But in French *créer* has not been similarly specialized. It means to produce or make, and not specifically to 'create', as is familiar to the women who wear the 'creations' of Parisian dressmakers. Consequently the French cannot distinguish between making out of already existing material and creating 'out of nothing'. German, on the other hand, *has* a distinct word for creating. It is *schaffen*. But *schaffen* is identical with our word 'shape', and originally meant no more than 'make'. The Greek word for 'creator',

κτίστης, means properly 'founder'. I suspect that a critical survey of the words used for creation in other languages would reveal other similar differences and variations.

The history of the theological doctrine of creation points in the same direction. It is quite a late discovery or invention. Primitive thought is not familiar with it; it nowhere seems to trouble itself about the origin of all things. Even when cosmogonies begin they always start with some pre-existent material, which is still a postulate of orthodox science. Hence the 'creator' is only the maker of a cosmic order out of an anterior chaos, which now strikes one as very like the state of maximum 'entropy' predicted by the Second Law of Thermodynamics. In the book of Genesis, which appears to be a monotheistic recension of earlier Babylonian accounts of the struggles of Bel-Marduk with Tiamat the Dragon of the Deep, *alias* the 'waters' of the Abyss, the pre-existence of these chaotic waters is implied: it is concealed only by the mistranslation of a Hebrew tense.[2]

In view of its religious and philosophic importance it is astonishing how very obscure is the origin of the theological doctrine of 'creation out of nothing'. According to my friend, the late F. C. Conybeare, it owed its birth to the exigencies of controversy. Philo the Jew, of Alexandria, found himself committed to proving the superiority of the God of Moses to the Demiurge of Plato's *Timaeus*. So he made much of the fact that the latter made matter out of empty space (*μὴ ὄν*) by imposing on it geometrical forms, whereas the former as potent enough to make the world out of nothing. I have not succeeded in extracting this theory from the text of Philo, and another friend, the late Canon R. H. Charles, has directed my attention to a (probably) earlier allusion to creation out of nothing in the book of the Maccabees (ii. 7, 28), which declares that God made all things out of "things that were not" (*ἐξ οὐκ ὄντων ἐποίησεν αὐτά*). But, as in later Greek the two negatives are frequently confused, it is hardly safe to assume that when a Hellenistic writer uses *οὐκ* he does not mean *μὴ*, and so is not merely alluding to the Platonic carving out of *μὴ ὄντα*. However this may be, it seems pretty clear that the decisive step (attested by my friend, Prof. J. E. Boodin, and Mr. Walsh, *loc. cit.* p. 27) was taken by St. Jerome when he translated the passage from Maccabees in the Vulgate by "*ex nihilo fecit illa Deus*" and adopted the term 'Creator' in place of the earlier 'Conditor' to translate *κτίστης*. For his Vulgate became the authoritative version of the Roman Church, and generated the doctrine of creation out of nothing. After that it was vain for philosophers to quote Lucretius's *ex nihilo nihil* and to decry the doctrine as mere foolishness, incompatible with the 'law' of causation, and they long did so at their peril.

Evidently, then, as so often in the case of great ideas as well of great men, the origin of the doctrine of creation was obscure. Philosophically it

was a paradox, and historically it was a mistake, resting on a misapprehension of Plato and a mistranslation of Genesis. Nevertheless, when the Christian Church adopted it a real and genuine novelty entered the world of thought.

§3

Now real novelties always have a hard time at first. Among their just grievances, the fact that officially they are always denied existence ranks high. But they might complain nearly as bitterly of the attempt to dismiss their claims by applying to them the word 'emergence'. For 'emergence' is in no wise an *explanation* of the occurrence of novelties: it only records their occurrence, and is hardly even a candid recognition thereof. For it is apt to be rather the vehicle for an ambiguous insinuation that the alleged novelties are not truly new but have long been lurking obscurely in the dark and waiting for an opportunity to break forth into the light of day. Thus, etymologically, 'emergence' has the same sort of dishonesty as 'evolution', and it is amazing that it should have found such favour even among philosophers.

Logically, it is open to a still more serious objection. As used, it suggests that the emergence of novelties is a rare and abnormal occurrence which deserves to be dignified with a technical term. This is calculated to conceal from us the fact that it is only a grandiloquent description of a very familiar experience, viz. *the occurrence of novelties*, and so to prevent us from facing this fact, as we ought, in its full generality.

§4

The real question which as philosophers we ought to discuss, and if possible to settle, before we allow ourselves (or others) to talk about evolution and emergence, and before we declare true creation inconceivable nonsense, is—What is the place and significance of *novelty* in the world, and what ought to be our logical attitude towards it? I will conclude, therefore, by offering some considerations bearing on this question.

(1) We should agree, I think, that Novelty is the *right* word for what has, been variously called 'evolution', 'emergence', and 'creation'. It is the right word because it is the simplest and the free-est from pomposity and contamination by irrelevant issues.

(2) It is indubitably a *fact*. For it is being generated to some extent by the course of events at every moment. Every moment arrives with some of

the freshness of the unforeseen and unexampled, and passes away into the irrevocable. It is because of the novelty it conveys that the course of events is irreversible.

(3) Novelty is neither unintelligible nor subversive of the cosmic order. For though the new as new is never predictable nor reducible to the old, yet it is, only too easily, absorbed into the old order. For its novelty admits of more and less, and it is never *wholly* new. It always shows itself more or less easily assimilable.

Hence (4) it is always apprehensible as a variation or innovation upon some ancient theme, and capable of explanation by reference to that. But such explanation is never complete. From the nature of the case it is only partial. It reduces the new to the old, treats it *as if* it were old, and by this soothing fiction beguiles us into accepting it.

We have never, therefore, to face the brutal and disturbing fact that Novelty is a universal, characteristic, and ineradicable feature of the Real; nor do we ever realize that it casts a doubt, or rather a limitation, upon our vaunted 'law' of causal explanation. For if our world is really such that nothing in its history ever quite repeats itself, it is clearly a *fiction* to treat it as if it did. Now this postulate of repetition is one of the major assumptions lurking in causal explanation, towards which neither Hume nor the interminable literature of the subject has ever induced philosophers to show themselves sufficiently critical. The 'cause' of any phenomenon is supposed to be fixed and stable, and in honour bound to reproduce *the same* effect whenever called upon. A 'cause' that was capable of learning from experience, and of modifying its operations accordingly, would be more human, but nothing like so *convenient* methodologically. But there is nothing in this human convenience to prevent an unvarying 'cause' from being only a methodological fiction, and even the stupidest of physical entities may be able to learn a little from experience in the course of aeons. The result would, of course, be that a prediction based on the uniformity of nature might be trusted to come true five years hence, but not 500,000,000 years hereafter.

I concede, however, that, as a matter of course, we shall continue to go upon the assumption that 'causes' do *not* change, simply because there is nothing else to go upon if we desire to foresee the future, just as we assume that causes are determined and will not upset our calculations by freaks of free will: but this concession does *not* oblige us to ignore the reality of novelty. We ought to remain fully aware that we are using a fiction and running a risk, and we ought to be for ever ready to modify and correct the assumptions on which we base our calculations. We should eschew, therefore, the illusory pursuit of safety and realize that life will always contain an element of adventure that will warrant hopes as well as fears.

§5

Before, however, our recognition of Novelty can be complete we must settle accounts with Logic. For Logic hitherto has been the greatest obstacle to the perception and discovery of novelty, and the greatest stronghold for the belief that nothing new could be true, and that nothing true could be new.

The old Formal Logic, and until quite recently no logical reformer has ever dared to question its fundamental assumptions, was carefully, though covertly, constructed to do two things. It tried, first, to predict the future entirely a priori, by mere reasoning without recourse to experience; second, to yield complete certainty that could not in any way be shaken or upset by any course of events. The instrument it relied on to accomplish both these ends was the same, namely, the syllogism. Now the syllogistic form lent itself to the purposes of Formal Logic by claiming to be incapable of losing any truth with which it was entrusted on the way from its premisses to its conclusion. Consequently, if only you supplied it with premisses which were absolute, you could rely on it that the conclusion it deduced would be so likewise. The fact, therefore, that the conclusion referred to the future made no difference; it had become irrelevant, and did not detract from the certainty of a syllogistic prediction. It was in this highly technical way that Logic upheld the existence of 'eternal' truth.

Unfortunately for Formal Logic the premisses of this reasoning were not themselves true. It had misconstrued the syllogism, and overrated its powers. It turned out that there were insuperable difficulties in starting from true premisses, or, rather, of guaranteeing the absolute truth of any premisses. No premisses could be found that were more than probable truths, and no conclusion that was more than the verification of a hypothesis, and therefore afflicted with the formal defects of all verification.

What was even worse was that it was not true that the syllogism was incapable of losing truth. It was found to be afflicted with a weakness, inherent in its constitution, which revealed itself so soon as you tried to use it and undermined the whole notion of formal validity. This weakness had escaped notice so long only because formal logicians are not themselves in the habit of using the forms of reasoning they prescribe to others; and the defect in question is not visible so long as you are content to contemplate only the abstract form of reasoning. But when you actually use it you put together two premisses you have taken as true, and may triumphantly 'demonstrate' an absurdity. You may then 'reflect' upon your *débâcle* and discover that your middle term has grown ambiguous, and so your reasoning fallacious. Further reflexion shows that this may *always* happen. For what may validly enough be taken as *M* in relation to *P* does not necessarily stay *M* when brought into relation to *S*. You, moreover, were no prophet:

in assenting to the premisses separately and in the abstract, you did not foresee how they would be used. So you may placidly agree that *all men are rational* and that *Smith is a man* and then be surprised to find him a raving lunatic; or, again, that *all men are mortal* and that *Socrates is a man*, and then be puzzled to say when he may be expected to die again, or whether you think that 'mortal' means 'dead'.[3]

In short, modern criticism has shattered the syllogism as an instrument of ineluctable coercion and absolute prediction, and with it our trust in delusive proofs that rest only on the implications of purely verbal meanings. The true moral is that we must steel ourselves to face a future that is really 'contingent', and really capable of generating novelties. We are armed only with probable anticipations; but it rests with us to cultivate a plasticity of mind that will keep pace with the changes of the real and readily adjust itself to new conditions. And that what is required of us is nothing excessive and impossible, we may learn from the reflexion that philosophic theory is only now commending an attitude which we all have practised all our lives!

NOTES

1. Cp., however, *Humanism*, chap. xii.
2. Cp. C. M. Walsh, *The Doctrine of Creation* (Fisher Unwin), 1910.
3. Cp. *Logic for Use*, p. 256.

13

THE METAPHYSICS OF CHANGE

It is not the purpose of these articles to propound any thing very recondite and abstruse, to develop, say, a metaphysical theory hitherto unheard of, and to prove it in ways that elude the ordinary understanding. They are intended merely to put forward some reflexions on the present state of our knowledge of the real world and our life in it, which are philosophic in the sense that they are not restricted to the assumptions and conclusions of any one special science, but rest on a general survey of all the relevant and available data. Inasmuch as the sciences are always growing, such a survey will be in order at frequent intervals, and any intelligent philosopher should be able to make it. The only thing in which these articles can claim to be distinctive is that no attempt will be made to exclude human personality and even their author's idiosyncrasy. For perhaps the deepest difference between philosophy and science lies in the fact that philosophy cannot in the end make the abstraction from personality by means of which the sciences so skillfully lay down the common ground on which they operate. The philosopher, on the other hand, is burdened by the double task of weighing the conclusions of all the sciences, and of taking into account,

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Must Philosophers Disagree? And Other Essays in Popular Philosophy (London and New York: Macmillan, 1934), pp. 235–248.

also, the personal data which every science officially omits and every philosophy tacitly builds on. Hence, strictly speaking, there must be as many metaphysics as there are philosophers, and none of them can be valid for all types of personality, and conclusive, whether as coercive or as satisfactory, for any but their authors.

In this article, moreover, it will be convenient to start not from the most concrete and familiar facts, but from the most abstract and general. Instead of reasoning from obvious facts to underlying principles, let us first establish principles and then proceed to their application. This is not the easiest procedure to follow, but it has certain advantages. Thus I find I am suspected in some quarters of being incapable of metaphysics, a suspicion which seems to prove at least that I have lived down the indiscretions of my youth and the memory of my early encounter with the *Riddles of the Sphinx*. Nor is this the only reason for administering first what may seem a rather stiff dose of metaphysics, and for daring to discuss the ultimate issues raised by all our attempts to understand the world. It is, after all, the logical order to begin with first principles.

§1

This being premised and understood, let us begin our reflexions with the metaphysical import of what we may provisionally call the fact of *Change*. There may be drawn from it certain important implications bearing on the creation of novelty and the value of the historical method of explanation; but to begin with I shall have either to justify my audacity in calling change a fact, or else to apologize for it. I prefer to justify it. Perhaps I shall be allowed to do so by saying that by 'fact' I do not mean ultimate reality, but rather apparent fact; I mean anything which will serve as a starting-point. In this sense change surely is an undeniable fact. Every thing that exists, everything that we can start from, including the person who observes the change, appears to change; therefore, is it not possible, natural, and worth inquiring whether this appearance is not a good sound datum for philosophic speculation, and not an illusion to be deprecated, disavowed, and dropped?

Yet there is nothing most philosophers have been more reluctant to admit. They have cudgelled their brains, tortured their thoughts and strained the resources of language, in order to escape from admitting the reality of change. They have turned it into a problem, a paradox, and a contradiction. Ever since the days of the Eleatics they have professed themselves unable to understand how change was possible. They have proclaimed it a paradox that a thing could change and yet be the same, that it

should be able to preserve its identity in change; they have insisted that there must be in it something that did not change.

They sought, therefore, to discover this immutable core of mutability. In the end, driven to desperation, they had to denounce change as a logical contradiction, as a defiance of the primary law of all thought and being. For did not the changing thing impiously contrive both to be what it was, and also not to be it? Was not change 'becoming', a self-contradictory union of being and not-being? When a chicken hatches or a kettle boils, the egg both is an egg and is ceasing to be one; it is becoming a chicken without as yet being one; while the water, similarly, is passing through what may be conceived as infinite gradations of temperature from cold to hot. Change, therefore, is condemned as a revolt against rationality, which the reason can never grasp nor sanction, although an incurable cheat of the senses seems to attest it; and philosophy can do nothing but ignore it sternly.

Despite these specious arguments, however, let us not surrender the reality of change, nor admit that the objections to it are sound. In the first place, it cannot be admitted that the only way of establishing the reality of change is by a metaphysical deduction a priori. It may well be too elementary a fact about reality for any such procedure, and direct personal experience may well be a more adequate way of apprehending it. At any rate, it is a way which appears to be open to us all. We all change continuously throughout our whole life, and we do not find it at all difficult. In fact, we find it impossible not to change. We all have, therefore, plenty of experience of what it *feels like* to change and yet to remain ourselves: upon that model cannot we construct our theories of what change may be in other things?

Now, when we thus examine change and identity-in-change in ourselves, we find that many philosophic fancies obtain no support. In the first place, change is not normally catastrophic and incalculable, but gradual, continuous, and orderly. I may now remember nothing of what I did, felt, and thought at the age of five, and I may have already forgotten some items of my experience of five minutes ago; but there is continuity and memory enough in my life to keep me interested in my past and in my future, and it is this continuity that I express by saying I am the same, though I have changed. True, if by a stunning blow or psychic shock I were to be totally severed from my past, my identity would be destroyed, perhaps for ever: but the recorded cases of such happenings, such as those of Miss Beauchamp and the Reverend Mr. Hanna, suggest not only that identity may be destroyed, but also that it may be recovered.

§2

Self-observation shows that in a changing self we cannot discover a part that changes totally and another that is totally unchanged. It is just as well that this is so, for else we should be confronted with the insoluble problem of uniting an ever-changing with an immutable part in the same self, and their encounter might end like that of the irresistible force and the insuperable obstacle. That is, they might refuse to meet, and prefer to cut each other! Actually, change seems to pervade the whole self, though with various degrees of intensity. The natural way of expressing this is to say that in some respects we change much, in others little. And if this way of changing is permissible and possible for us, why not for other things? There is no basis in experience, therefore, for the philosophic fancy of any unchanging substratum of change—and we should rejoice to get rid of it, for we could never hope to understand how a thing made up of two heterogeneous and discrepant parts could have any cohesion or unitary nature.

§3

The alleged self-contradiction in the notion of change turns out to be mainly prejudice and misinterpretation. It misconstrues the relations of rest and motion and the verbal fact of predication. It is, of course, a fact that in predicating we say ' is', and so predicate 'being' of any 'becoming' we may be describing. In the very act of describing a change, we say 'the water is boiling', 'the egg is hatching'. But when we *say* these things what do we *mean*? Do we mean to say that change is impossible? Do we mean to assert a being absolute, static, and immutable about an ever-changing flux of becoming? Do we mean to commit ourselves to an absolute dualism between being and becoming, rest and motion, reality and appearance, reason and sense? Do we mean to denounce all the most obvious and familiar features of our world as impossible, or, at any rate, incomprehensible? No doubt, ever since Parmenides and Plato, most philosophers have put this strange interpretation on these facts, but is it impossible that they were mistaken ? Must the plain intentions of those who use the little word '*is*' yield to its verbal meaning? Cannot another construction be put upon our use of it? May it not be a mistake to smuggle this whole metaphysic into it? Must our recognition of it as the first word of logic commit us also to taking it as the last word of metaphysic? Surely, all these questions answer themselves!

Actually, of course, the common-sense of the human race has never allowed itself to be beguiled by this philosophic nonsense. After listening

to Zeno's conclusive proof, by Eleatic dialectics, that motion was impossible, his hearers, nevertheless, got up and walked out; but even after this humiliating experience Zeno had not the wits to see that he had suffered a practical refutation, and that if he wished really to prove either his own doctrine or his own belief in it, he must stop wagging his tongue!

This *solvitur ambulando* way of confuting philosophic paradoxes has had great vogue ever since, except that the audience no longer walks out. It no longer walks into the lecture rooms in which philosophers are airing their absurdities. Nor can this mode of confutation be invalidated by calling it practical rather than theoretic; it is all the more effective.

§4

There is, however, another way of confuting Eleaticism which is more respectful. We can call in question its interpretation both of the logical fact of predication and of the physical facts of motion and rest. It is not, after all, inevitable to take the *is* of predication as asserting immutable being and to declare the terms predicated rigid and unchanging.

It is possible to dip Logic itself into the flux and so to take the starch out of its Formalism. In fact, it has been done. I have for many years challenged Formal logicians to meet the contention that every significant predication inevitably changes the meaning of the terms it uses, and no one has refuted, or even faced, my argument. It runs thus: Whenever the formula *S is P* is used to convey a real judgment—that is, one which really embodies and conveys fresh information—the meaning of its terms thereby undergoes a change. Its subject S *becomes* an S-of-which-P-may-be-predicated (which it was not before), and its predicate P becomes a P-which-may-be-predicated of-S; thenceforth both these developments, in virtue of the judgment's success, form part of the meaning of S and P. So the assumed immutability of logical meanings or 'concepts' is simply a logical blunder.

A blunder in physics, similarly, seems to underlie the prejudice against the reality of motion. Rest is not a physical fact at all, for none of the bodies said to be at rest is so really for the physicist. Rest is always relative, and with reference to other bodies which themselves are in motion. Hence rest is really a *psychological* fact, and the prejudice in its favour is nothing but a revelation of human laziness.

Thus the metaphysical case against change breaks down utterly. There is no reason why the real should not really change, as it seems to do, and there is no reason why we should not apprehend change as we seem to do, viz. by directly experiencing it in our own persons. There is not even any reason why we should not proceed to understand the real on the assump-

tion of the reality of change, and succeed better in this way than we have ever done on the assumption of its unreality. Let us therefore try this alternative.

§5

Only, of course, we must be willing to make the necessary readjustments, both in our metaphysics and also in our physics. Let me briefly indicate them. (1) We must not continue to believe that what we call the Laws of Nature are necessarily eternal and immutable. Eternal and immutable laws are merely a priori deductions, consequential on the old static conception of reality as incapable of change. Instead of this lazy deduction, let us treat our laws as just the habits of nature wherever we think they are objective, and let us observe nature without prejudice. But let us remember also that *subjectively* laws are just devices for predicting the course of happening. We shall, of course, *prefer* to find constancy in nature, and shall therefore look for it; but when we find it, we shall hesitate to declare it absolute on insufficient evidence. We shall naturally construe the constancy we find as due to the stability of *habits*, often of great antiquity and deeply ingrained, but not, on that account, to be regarded as immutable. And we shall have the consolation that this new way of regarding laws of nature is much sounder in logic and more in accord with the actual practice of the sciences. Incidentally, we shall find it much easier than philosophers now suppose to think of nature as changing her ways and of her laws as evolving. It will also be ever so much more interesting, and even thrilling.

We shall (2) be entitled to scrap such ancient saws of proverbial wisdom as *there is nothing new under the sun*, and with them all the despondent arguments that some thing delightful and desirable cannot be done, because it never has been done. What has never been possible throughout the aeons may become possible to-morrow; or again, we may have to wait another million years for it. But there is no point in declaring it impossible a priori. That is merely discouraging, and may deter us from rendering it possible. We thus get a good methodological reason for not declaring impossible anything it would be desirable to achieve.

Least of all (3) should we declare the occurrence of real novelties impossible. Rather, we should hold that the world is at least as full of novelties as it seems to be, and that the daily experience of the merest ignoramus is a better proof thereof than all the a priori demonstrations of logicians are a disproof.

§6

But we should be willing, also, to pay the full price for the recognition of Novelty. (1) Novelties justify the concept of creation; but they set limits to the confidence of our predictions. And they play havoc with a very widespread notion of causation. For they render unpredictable the new *qua* new, and more or less unpredictable all things into which an appreciable element of novelty enters. If, then, all events have novelty inherent in them to some degree, they all escape to that extent from the control of causal 'law'. They become free, and unpredictable.

But let us not be terrified by this conclusion. Let us not plunge at once into the desperate inference that therefore the cosmos has collapsed and anything may happen. Let us not listen to the alarmists who assure us that if every tiniest crevice whereby free will may creep into the cosmos is not hermetically sealed, its whole order crumbles and chaos triumphs. Let us remember rather that the same argument which entitled us to recognize the possibility of novelty and indetermination entitles us also to determine their frequency and extent *empirically*; we can then see that neither appears to be a serious obstacle to quite as much calculation as we can achieve, nay, as we really need.

Let us remember, also, that the assumption of causal laws was one of many devices by which man has sought to make predictable the course of events. It was not the first or the most obvious of the devices tried, though it has proved the most successful in the end. Nor was it easy to make it work: it demanded a goodly number of fictions and abstractions. Indeed, it abstracted from so many items in the facts that it never could work exactly. So the admission that it cannot conceivably work exactly, because the real generates novelties and is not determined absolutely, will cost us nothing, practically. Nor yet theoretically, because we can still use determinism as a methodological assumption, without believing it to be metaphysically and absolutely true. We shall continue to use it, for all the uses we can put it to, simply because there is no other way of predicting whenever we desire to calculate. But it should give us much metaphysical relief to reduce determinism from a final truth to a rule of method.

§7

The physicist has really, nowadays, much the same problem of readjustment as the metaphysician. He also has had to take over a set of static laws presumed to be eternal and immutable and to make them work upon the ceaseless flux of phenomena. But he lacked the metaphysician's easy

resource of loftily declaring the phenomena illusory, when they failed to conform to his preconceptions. He could not rid himself of the phenomena. He could not disavow the duty of predicting what would happen. He could not flatter himself that when phenomena gave the lie to his predictions, it was merely so much the worse for the phenomena. Their behaviour has had the power to force him to revise his laws; nay, it has power to force him to revise even his conception of law. So, in due course, and after desperate resistance, he has had gradually to face the idea of a changing reality. At first he did his best to struggle against the unwelcome idea. He tried to compromise by formulating a cosmic law of evolution, supposed to be calculable *qua* law, and reducing change to an *unfolding* of what had been eternally involved. But latterly he has been forced to go further. He has partly realized the fictions which are latent in his notion of natural law. He is now willing to admit that his laws are statistical, and exhibit only the constancy of an *average*; they do not prove a real uniformity of individual behaviour.

§8

(2) It follows, however, that natural laws do not really prove that individual behaviour is completely determinate. Indeed, in some cases it has to be admitted that certain events are theoretically unpredictable. If anything, the physicist is now inclined to exaggerate his impotence. For, so far as I understand it, Heisenberg's Principle of Indeterminacy involves a greater renunciation of the scientific ideal than the situation actually demands. It is no great marvel that it should be impossible to determine both the place and the velocity of an electron simultaneously, if the only way of observing electrons is to throw light upon them, and if this operation has the effect of sending them scurrying away. Moreover, the underlying presupposition that observation must be presumed to make no difference to the objects observed is grossly blind to the operational character of human knowing, which pragmatism has brought to light. Lastly, there is nothing whatever in Heisenberg's principle to stop us from using determinism as before, wherever we can, i.e. as a principle of method.

(3) Thirdly, what is probably more important than either the modifications in the conception of natural law or the limitations in the application of determinism to physical phenomena, is the discovery of what Eddington has picturesquely called Time's Arrow, *alias* the one-way character of cosmic change. This is plainly incongruous, if not incompatible, with the belief in an eternal and immutable cosmos. It means that we pass through reality as through a one-way street. It means that the real always

has a history which it behooves us to remember, and that everything is what it is in virtue of what it has been through. It suggests the thought of a world-drama and a cosmic history. It points back to a beginning in creation, and forward to a consummation or a catastrophe. It gives scientific body to the anticipations of the wildest mythologies and to the fancies of the bizarrest philosophies.

§9

Let me substantiate this last remark by telling one of these creation-myths and then comparing it with what was said about the evolution of the universe at the Centenary Meeting of the British Association for the Advancement of Science in September 1931. The creation-myth in question is told in a book called *The Philosophy of Salvation* (*Die Philosophie der Erlösung*). Its author, a young German pessimist named Philip Batz, who wrote under the pseudonym of Mainländer, started, quite in the orthodox metaphysical style, with the problem of the One and the Many. After long reflexion he decided that, though both were indispensable, they could not be thought to coexist for if they were real *together*, the One must inevitably swallow up the Many and annul their reality. So they could only exist successively. But the One could continue to unify the Many, even after ceasing to be, if their unity were construed, like that of the organic world in Darwinism, as a *unity of descent*.

So he constructed his myth. In (or rather before) the beginning there was nothing but the One. The One was absolute, and was the All; but it was bored. So it recognized that existence was evil, and got out of it. Out of this creative suicide of the One the world was born. Its components are the many fragments of the Absolute, held together by their common descent from the One, and all participating in its ancestral impetus towards extinction. So the whole universe is petering out. Only, as the Absolute was so great and powerful, the extinction of the Many seems to us a slow process, and takes much time. The impetus all things derive from the One is, however, a sure guarantee that in the end complete annihilation will be achieved. For empirical confirmation of this theory Mainländer appealed to the law of the dissipation of energy, as it was then called, which was already known, though the finiteness of the universe and the break-up of the atom had not yet been suspected. Further, he was so pleased with his theory that on receiving an advance copy of his book he sent a bullet through his head, feeling that he had done his bit by pointing out to the suffering Many the pathway of salvation which all were bound to follow.

With this pathetic tale compare the following quotations from the

Report in *Nature* for October 24, 1931, of the Discussion on the Evolution of the Universe. I will quote first from the paper of Abbé G. Lemaître of Louvain, one of the authors of the theory of the expanding, or rather exploding, universe. Premising that "a fireworks theory of evolution is needed," he suggests that the highly penetrating cosmic rays which fall upon us from space "were really produced by the process of the formation of the stars," and have been travelling round the universe ever since. For as "the stars are surrounded by an atmosphere, and an atmosphere would altogether prevent any escape of cosmic rays from the inside of a star," it must be supposed that " the cosmic rays went off from the stars at a time when the stars had no atmosphere. The stars are born without atmosphere, the atmosphere evolved after the escape of the cosmic rays . . . some 10,000 million years ago." He then argues that since atoms are known to disintegrate, and no limit can be set to their size, the cosmic rays may have "escaped from a big-scale super-radioactive disintegration, the disintegration of an atomic star, of weight comparable to the weight of a star."

We need only go two steps further, and assume with Professor F. S. C. Northrop a 'macroscopic' atom dissociating into a universe, and with Sir James Jeans envisage a final state in which (p. 702) "all matter is dissolved into radiation and nothing remains but radiation traversing empty space," to arrive at the essential ideas of Mainländer's metaphysical dream.

§10

But whether or not we welcome the notion of an expanding but not unlimited universe, having an origin in the past, a process of evolution and a term of life—and whether we welcome it or not will be largely a matter of taste—it is clear that the axiomatic presuppositions of the old physics have gone by the board. As Jeans says, "there is conservation neither of mass nor of energy" (p. 704), and the philosopher will easily console himself for their loss, if he is allowed to point out that neither was ever proved except by arguments which presupposed it, and that logically both were nothing more than methodological assumptions.

He may then point out that, abstractly and apart from the empirical evidence, there are three or four possibilities, all equally thinkable. The universe is such that the quantity of Being is either (1) constant, and neither increases nor diminishes (this is the assumption of immutability, and has the advantage of being the simplest, and no other); or (2) steadily diminishing, as Mainländer supposed. This alternative gets strong empirical support from physics and the dissipation of energy, which is a consequence of the second law of thermodynamics. But (3) the quantity of Being may be

increasing. This possibility may be suggested by the trend of psychic life. It may also be shown to underlie, dimly apprehended, some of our dearest prejudices about evolution. (4) It is also possible, of course, that if Being is of different kinds, each of these three processes may be exemplified by some of it, so that the actual course of events may be a diversified resultant of all three.

This raises two big topics, viz. what is the actual course of evolution, and what we should mean by this popular notion. Both must be reserved for the next chapter.

14

THE RELATIVITY OF METAPHYSICS

Metaphysics is the name for the loftiest and most arduous region of the philosophic field, which promises its votaries the finest views and an all-embracing conspectus of the whole. It has, however, drawbacks too. Its peaks are plentiful and are suspected to be virgin; for the more accounts of their alleged ascents one reads the more doubtful one grows whether anyone has ever really climbed to their very tops. Moreover, they are nearly always shrouded in thick clouds and impenetrable fog, the ascent to them is steep, and the going rough; while the atmosphere on the summits must be so highly rarefied that no one could maintain himself at that altitude for long. So it is no wonder that metaphysicians are rare and precious and that metaphysical ascents are not adventures for the masses but fit only for the trained and hardy few, with the best guides. They are, indeed, a form of intellectual mountaineering. As such they are good sports, and they may also be good fun, if we do not take them too seriously and are willing to put up with hardship and defeat and turn back in time when the conditions are unpropitious. For we must not assume that we can scale our peak, or that we shall get our promised view, still less that we can dwell aloft upon it, as on a philosophic throne, and continue to look down with contempt and unconcern on the labours and the progress of the sciences.

Our Human Truths (New York: Columbia University Press, 1939), pp. 176–188.

Dropping these metaphors, we should conceive metaphysics as the final synthesis of the sciences, as the culmination and acme of the endeavour to know. But we shall have to be prepared to defend this conception of its function against the rival view, which regards it as an independent science of ultimate reality which is wholly a priori and independent of experience and of the sciences. Metaphysicians have often tried to conceive their function in the latter way but have always miserably failed. They may fail, also, if they go on our conception of their function; but if they do, they will fail more honourably and in a way which gives promise of subsequent success. Our conception brings metaphysics into close connexion with the sciences, which provide them with their data. But these data may be insufficient. The sciences are and will always continue to be incomplete, and they cannot, therefore, provide sufficient material for a successful synthesis. But, as they are also progressive, the metaphysician lives in hope that they may do so in the future. He must also ever be prepared to adjust and improve his metaphysical synthesis as fresh scientific material accrues. So, with growing sciences, metaphysical syntheses cannot remain unchanging and unaffected by the fortunes of the sciences.

This conception of metaphysics has, moreover, the advantage that metaphysics can never be an utter failure. No matter how imperfect their success and how frequent their failures, they can never wholly be suppressed. Metaphysics will remain as an aspiration and as a problem to be solved, even though we never actually succeed in constructing any final synthesis of all knowledge and in commending it to all. Now, if such is the place of metaphysics in the philosophic field, to what sort of metaphysics may we expect Humanism to conduct the philosophic adventurer?

In the first place, we may note that the humanist is not bound to set out on metaphysical adventures, if he does not wish to, if he has not the heart or the head or the stomach for such things. As metaphysics is such an audacious undertaking, his should be a great relief. Humanism allows him to excuse himself. He can say: "I do not think that metaphysics is a science. Its data are too fragmentary and too disparate; the sciences contribute too little, and subjective preferences and guesswork count for too much. So putting together a metaphysic is a thankless job and really a waste of time and ingenuity. Far better cultivate your garden in some cozy corner of the scientific field and eschew adventures." Humanism cannot condemn this attitude, and it may, in fact, be the best for most of us to adopt.

But neither, secondly, does Humanism absolutely forbid and taboo metaphysical adventures. It recognizes that it is a legitimate human craving to synthesize all knowledge and to view all existence as a whole. Nor is there harm in trying. Only it insists that the nature and the risks of metaphysics should be realized beforehand, and that their results should not be

overrated. No metaphysician has a right, for example, to force his metaphysics fanatically down our throats.

For, thirdly, all metaphysics are only probable. They should be regarded as hypotheses, as thought-experiments, as more-or-less ingenious guesses, the value of which needs to be established by persistent testing. They should never be allowed to harden into dogmas, but should always be kept plastic and improvable.

The more so, fourthly, that they are at bottom individual experiments, relative to individual data, and presuppose personal idiosyncrasies. They cannot, therefore, constrain assent. A metaphysic which is true for one man, because it seems to him to synthesize his experience, may be false for another, because his personality is different. For example, a pessimistic metaphysician can never hope to convince an optimist. For even if they agreed on all the facts, they would yet differ irremediably in their valuation of these facts, and this difference of interpretations would have far-reaching consequences.

This essential individuality of metaphysical constructions is attested by the whole history of philosophy. The endless variations and vicissitudes of philosophic systems become intelligible only when they are understood as expressions of the personality of their makers. The whole history of philosophy thus becomes an eloquent paean on the triumph of personality.

Moreover, the essential individuality of metaphysics is deducible from their very conception. A metaphysic, *ex hypothesi*, has to synthesize all the data all the sciences can provide. But it must do more. It must include also in its synthesis all the material guaranteed by each man's direct experience, or in other words, all his idiosyncrasies and his whole personality. For a metaphysic cannot plead, like a special science, that its outlook is restricted and that it may leave outside any facts for which it has no use. We must include all facts; and idiosyncrasies, be yond question, are psychic facts.

These personal data are, moreover, most important metaphysically. They supply the modes of interpretation and the points of view, they determine the aims and values, without which no metaphysical synthesis can be effected. Whether he knows it or not, a metaphysician's personality is always an essential, ineradicable presupposition of his system. He shapes his system to suit himself, and its cut reveals his personality.

But, just because it fits him, it never quite fits anyone else. We should beware, therefore, of a philosopher who retails absolute and universal truth, good for all, and for all purposes: he is a vendor of panaceas and, most probably, a fool or a fraud. We should beware, also, when two philosophers profess the same doctrine; it is always two doctrines that they advocate, because they understand it differently. A genuine metaphysic is the most individual thing in the world.

Now, this perception strikes a death blow at dogmatism and intoler-

ance; but it is not a bar to sympathy and even understanding. For, without literally appropriating another's metaphysic, we may recognize it as alien to our own and may understand, also, how the differences in both cases flow from the differences in the persons concerned.

Undoubtedly this peculiarity deprives metaphysic of its claim to be a science in the usual sense. For sciences are at bottom methods, that is, ways of dealing with a selected material for certain human purposes. They are common highways, meant for common use, without regard to personality, and are good for all.

But how do they achieve this feat of communication? Simply by a trick; simply by abstracting from personality at the outset. But this is a trick metaphysics cannot emulate. They cannot abstract from personality, because personality is a fact, and a fact which enters into their essential function. It is part of their business not to abstract from personality, but to take account of it, as of everything else in the world; and if, on this account, they are excluded from the circle of the sciences, they must grin and bear it.

We see, then, how unexacting metaphysic is. If you do not like it, you need not embark on it; if you do not like the results of any metaphysical inquiry, you need not grow alarmed. You need not quarrel with it nor take it tragically. You can put it down to its maker's idiosyncrasy and console yourself with the thought that, after all, it is only his personal guess and that no one can deprive you of your right of guessing, too.

I expect that after all these explanations many will have lost whatever appetite they may have had for hearing about my own personal metaphysic. I could, therefore, excuse myself the more elegantly that I perpetrated quite a pretty metaphysic once, myself, in my crude and daring youth. It was called *Riddles of the Sphinx*, and references to it even got into some German histories of philosophy. It is now out of print, and I am unlikely to reprint it. For it would need too much rewriting. That is natural enough, for if I wish to make no changes, I should be confessing that I had learned nothing in the last forty years.

However, I shall not say how I should change it. I find it is as much as I can do to take the responsibility for my own metaphysic without taking the responsibility of foisting it on anyone else, and this is a further reason for not undertaking the responsibility for any other metaphysic. Ultimately everyone should bear the burden of his own convictions; the most that Humanism should be required to do is to drop some hints concerning the ways in which metaphysics may be constructed, so that everyone who chooses may be able to construct his own to suit his case and to suit himself.

The natural starting point for all humanist metaphysics will be, of course, the great saying of Protagoras, which is the first statement of Humanism, and

one of the deepest of philosophic dicta. *Man is the measure of all things; of things that are that they are, of things that are not that they are not.* No completer statement of relativity is conceivable; it plainly anticipates Einstein by its reference to the problem of measurement, but it enunciates a more thoroughgoing relativity than any physics has as yet found use for.

It serves as a salutary reminder that every problem, every belief, every reality, every truth is relative to man the knower, and that it is meaningless to trouble about unknowable "reals." This, however, in no wise denies that there may be reals as yet unknown to us, which we may sometime know; it merely assures us that when that day comes they will come into relation with our minds. It removes, therefore, all apprehension that our life may be doomed to failure, because essentially dependent on what does not exist for us, and it warns us against vain speculations about reals unrelated to our life.[1] The real world which concerns us, which we should seek to measure, conquer, and control, is one related to us and necessarily relative to our apprehension, and this is the best and most hopeful feature about it. It is not unknowable and inaccessible to human thought and unresponsive to its operations. The real world is *our* real world, measurable by our standards. It is further limited by the dictum of Protagoras that science is essentially measurement, an *aperçu* which the history of science has amply confirmed. Surely there is nothing in this doctrine which is anything other than an encouragement to thought.

Yet, strange to say, when we turn up the old-fashioned histories of philosophy, we find this grand dictum described and decried as "scepticism." Why? For no discoverable reason; merely to gratify an ancient prejudice which dates back to Plato and is only an appeal to human indolence and slipshod thinking. It assumed, without examination of the facts, that there could be only one single universal truth, alike for all knowers and independent of all knowers—a thoroughly non-human truth, therefore, which we were bidden to adore as superhuman. But neither Plato nor anyone since has ever been able to explain how such truth, if it existed, could be recognized and grasped by us; so the outcome of this so-called "idealism" was really scepticism: yet whenever one challenged it and pointed out its consequences, one was accused of "scepticism."

But did Protagoras deny all truth when he declared that truth was relative to man? Surely not. He denied that truth was absolute and inaccessible to man; but he affirmed, surely, human truth in the plainest terms. Was it to deny all truth to declare that every man had his own truth? That was to deny that there was only one truth; but it substituted many truths and multiplied truth a hundredfold. It was to be a pluralist about truth, not a monist, and still less a nihilist. It was to allow everyone a vote in the making of a common objective truth which was a fruit of social intercourse

and mutual agreement. It was to be a democrat about truth, and not a monarchist, and to abjure all attempts to make truth rest on tyrannous coercion. There is really, therefore, no way of bringing Protagoreanism into touch with scepticism, unless one simply takes for granted that any denial of absolute and universal truth, however cogent and reasonable may be its grounds, must be denounced as scepticism. Moreover, as we have seen, Protagoras was quite right metaphysically. Metaphysics must exist in the plural if they are to perform their characteristic function. They must be relative to the experience and the knowledge and the needs of their makers. In this they differ from the sciences. But that the sciences are not relative to individual men, that they proclaim universal truths which claim to be the same for all men—and for none—is due to their abstractness. They all deliberately practice self-limitation. They select a small field for their operations, and they omit the personal side of knowing, so far as they can. But in so doing they approach, not truth, but fiction.

It is, therefore, a great illusion which admires them for ignoring the very data which are most decisive. If the abstraction practiced by the sciences could really be carried through completely—and the mere statement of this ideal betrays how futile and self-negating it is—if we could really know the real as it is apart from us and our knowledge of it,[2] such knowledge would be literally worthless. For we ascribe value to the real in virtue of its relation to human ends and feelings, and a completely dehumanized real would be neither knowable nor worth knowing. Have we not a right, then, to take the assurance that our world is inalienably ours, necessarily related to each of us personally, and not merely to an abstract "humanity in general," in order to exist at all for us, as a precious pledge that we may remould it nearer to the heart's desire?

Let us not, then, be intimidated by foolish outcries against "scepticism" and "subjectivism." A plethora of truths is not the same as none at all. And to start with subjective truths does not condemn us to end with them. It only means that we should trace out the interesting process of mutual exchanges and adjustments by which the mind gets to know its world, and by which the common truths that get social recognition are segregated from the personal truths of immediate experience that remain individual and incommunicable. We can thus observe the growth of the objective out of the subjective, until we reach the common world of common sense and understand its working.

Protagorean humanism, therefore, is none the worse for being relativistic. The relativity of our world to our experience does not detract from its reality, but enhances it. Humanized, it shelters us against the frosts of naturalism and dissipates the nightmares of absolutism. We do not need the pretentious absolutes of the old philosophies, either absolute truth or

absolute reality. For both would be unattainable. Truth-for-us and reality-for-us, revealed progressively in the cosmic process, are far better for us. Why, then, shrink from them, when they are offered us?

Next, Protagorean humanism seems to have very definite applications to the stock controversies of metaphysics. The various naturalisms, materialisms, and behaviourisms it easily disposes of by showing that they leave out of their calculations man and human personality and that they misinterpret scientific method.

It has a direct bearing, also, on the issue between realism and idealism. It finds that the ordinary idealist is singularly lacking in the courage of his convictions. He does not venture to contend that he is master of a standpoint whence all things appear transfigured in a new and hopeful light—he is anxious, rather, to show that practically idealism makes no difference and that he can endorse all the conclusions of common-sense realism. This seems to me a great mistake in tactics. It reduces idealism to an incomplete and pusillanimous philosophy that does not alter or improve the philosophic situation. It thereby exposes itself to the criticism of the pragmatic test, which declares that when the practical deductions from two doctrines do not differ they are really different wordings of the same doctrine. If, therefore, idealism makes no difference in the view of reality taken by common-sense realism, it is indistinguishable from realism and it is meaningless to call it "idealism."

To be genuinely different it must make a difference, and to be better it must make a difference for the better; moreover, it must be formulated so that it can do this. Judged by this criterion, Protagorean humanism alone would seem capable of leading to a genuine idealism which can make a significant difference to us and, after accepting all that is of value in common-sense realism, can open out much greater vistas. Its procedure may be outlined thus:

To make us and our reality mutually dependent on each other is an idealism, for it is to scout the superstition of an objective world completely alien to the knowing subject. Such an assumption serves no reasonable purpose, either of theory or of practice. It is as useless theoretically as it is unpalatable practically. Further, to reject it is not to reject objectivity; it is to regard objectivity as an achievement, not as a datum. It is, moreover, an achievement of great antiquity, which has high pragmatic sanction as embodying so much human experience of the way to live. The humanist does not, therefore, repudiate the common world. His question is rather: "How much of my immediate experience belongs to the common world? That is, how much of it can be shared? I want to share as much of it as I can, for I firmly believe in the existence of other spirits and need their sympathy. Why do I believe in others? Because I will not hold that I am the

responsible author of my whole experience. I will not be a solipsist, because I do not wish to look upon myself as a raving lunatic and the maker of what would be a nightmare world. I find, moreover, that my rejection of solipsism works excellently; it is verified as strongly as such a theory can be. That is how I escape from solipsism. The other idealisms cannot do so by the merely intellectual arguments they use. These all break down or make matters worse. They are also quite superfluous."

At bottom there is only one sound argument for idealism, but idealists mostly shrink from using it. It is too empirical and cuts too deep. Unlike the technical "proofs" of idealism, it does not appeal to the implications of words, into which the conclusions to be reduced have first been smuggled, but rests on a common undeniable experience which is familiar and open to all. And it is entirely welcome to Protagorean humanism.

We may call it the argument from dreams. Every night we go to sleep and usually dream. Now, in our dreams we venture forth into other worlds which seem as real as ours. There seem to be any number of them, and they have a great family resemblance to the world of waking life. Though not in our space and not always easy to correlate with our time, they are spatial and temporal. They are likewise physical, though their laws seem often to be different. For example, we sometimes find that in a dream we can fly at will. Also, they are inhabited by living beings and men, though the former are often strange, and the latter strangers.

Our visits to these dream-worlds are only brief. We return from them by the discontinuity entitled "waking up." When we are able we find ourselves back again in the world we went to sleep in and ruthlessly revise our estimate of the reality of our nocturnal adventures. Usually we say, "so then it was only a dream," and dismiss it as unimportant. Nay, we claim to have constructed it ourselves, and deny its reality. "Reality" here means "cosmic importance"; for as a psychic fact a dream remains real until it is forgotten. Not all dreams, however, are thus condemned; a small but important minority are regarded as valuable revelations and visions of higher realities by those who have them and by their followers. Such "dreams" have entered into the fabric of all the great religions. The grounds for these higher valuations are, however, derived from the intrinsic contents of these dreams; so far as our experiencing goes, there is no difference between the divinest vision and the idlest dream. Therefore they ought all or none to be condemned as unreal.

Our practical attitude towards dreams is thus inconsistent, and the scientific explanations of them also vary. But philosophically they are clearly of great importance. We can learn three lessons from them which we could learn from nothing else:

(1) Dreams prove that idealism may be true. If we adopt the usual

interpretation that they are unreal and creations of our imagination, they indisputably prove that we have the power of creating subjective worlds which can ape objective reality while they last. This shows that the idealist contention that the mind can create reality can be exemplified in fact. Ergo, may not all reality be similarly mind-created?

(2) May not our real world be a dream-world, too, differing from the rest only in that we have not yet awakened from it and so are not yet able to condemn its reality in retrospect? Hence, life may be all a dream, or rather a series of dreams separated off by the transition called awakening—or death. Life might conceivably pass through an infinity of such experiences, each enwrapt within the other, and revealed in their true nature only when they are transcended. This is a very old suggestion, often urged and never refuted. Plato argues against it in the *Theaetetos* (158), and it pervades all Hindu philosophy. Moreover, we need not suppose the source of dreaming to be random; if we please, we can import a definite direction into it. We can then conceive the series of life-dreams as conducting us either into more and more real worlds or as plunging us deeper and deeper into nightmare. We can then define Heaven as the beatific vision of supreme reality and Hell as the abyss of bottomless illusion.

(3) Dreams yield an interesting basis for the notion of a future life. They support it by enforcing two suggestions. Not only do they (*a*) sweep away at one blow all the objections to it which rely on the ultimate reality of our present physical world, but (*b*) they inform us how the transition from one world to another may be conceived and even what it feels like. It may feel just like awakening to a more real and better life from an evil nightmare in which we "dreamt" we had "died." Dreams, moreover, may reveal dream-worlds of every kind and degree of reality, from the lowest to the highest. For none need be conceived as utterly unreal. In this series our present real world might not be more than a single term, intelligible only in the context of its series. It might be real enough, and important, while we traversed it. Yet its full meaning might become apparent only after we had quitted it and could view it in a wider setting and could recognize the truer realities on which our present reals were modelled and of which they were the adumbrations and dreamlike anticipations.

With this suggestion it may be well to close. For has it not been shown how Humanism can provide materials for the construction of an infinity of metaphysics? And must not their actual construction be left to the taste and resources of their individual architects?

NOTES

1. Most forms of "realism" would seem to warrant this apprehension, and to need this "warning."

2. What is at the moment the most progressive of the sciences, physics, is beginning to entertain serious doubts about this ancient fiction. It is discovering that it can no longer work with it. This would seem to be the real meaning of Heisenberg's Principle of Indeterminacy. We cannot know *both* the place and the velocity of an electron, because knowing involves an operation which affects it. In order to observe it, we have to throw a ray of light upon it. But that sends it scurrying away, and does not reveal where it would be but for our interference. This situation, however, should be no paradox, but a welcome confirmation for a pragmatist notion of science, which takes an operational view of knowing. It is foolish to try to know what electrons are doing in the dark when no one is looking. (This was clearly developed by Dr. John E. Boodin in a paper presented during a formal dinner at the University Club of Los Angeles, tendered by Mrs. Wildon Carr, Dr. Schiller, and Dr. Boodin to Dr. Albert Einstein in 1934. Editor's note.)

Part Three

EVOLUTION AND RELIGION

INTRODUCTION TO PART THREE

by Hugh McDonald

Schiller in his later years distinguished his epistemological and logical form of humanism from religious humanism. However, he was still sympathetic to the heart of religion. Schiller was a vigorous critic of pantheism, the identification of God with nature; and also of the idea of an infinite God.[1] Schiller argued from his early period to some of his last essays that a personal God could not be an infinite other. Further, he accepted the arguments of Kant and others against the infinite God as the cause of the universe, the "cosmological argument." However, he also argued that Hume's and Kant's arguments for design were inconclusive, or at best argued against the "superlative" description of God originating in the middle ages. The alternative was not atheism, but a finite God, who did the best he could to create a good universe, but was limited in power and knowledge, however vast his powers might seem to mortal creatures. Schiller argued that a finite God was consistent with Kant's moral God. Moreover, he believed that only such a God was consistent with personality, a personal God, and a meaning for life.

Schiller went against the school of Darwin interpretation that believed that Darwin's work was the death knell of the design argument for God's existence. On the contrary, he tried to reconcile Darwin with design.[2] He believed that the view contained in Darwin was reconcilable with a finite

designer of the world, a God with personality. He also argued that the "other world" of supernaturalism is not necessarily out of time and space; that the universe we know is finite and therefore potentially there is room for another space.

Schiller argued that religion, which he sharply distinguished from theology, was a distinct but legitimate form of knowledge, though, given its many varieties, difficult to define. Religion in general is rooted in the human heart, and involved a "demand for something that will respond to our spiritual needs and cravings" and the hope for the possibility of a "higher and better order" to which we may rise. Since the religious impulse arises from the heart, the idea of a personal God, however vast, is closer to the common understanding than the abstract God of the philosophers.

Following William James in *The Will to Believe*, Schiller argued that the pragmatic method could be used to discriminate between valid and invalid uses of faith. He criticized the rational analysis of faith: religion could not be deduced "a priori" as it were, since it is revealed. However, the methods of science and those of religion are essentially alike. Religious experiences are themselves facts, although not identical to facts in other fields, and are in principle subject to scientific verification and investigation. The will to believe is not enough: like other sciences, religious knowledge should be judged by its consequences. Humanism can help make believers more critical of their will to believe.

Schiller also believed that free will was consistent with a finite God, if not an omniscient God. A God with limited power explains the existence of evil in the universe, a hard problem for advocates of an infinite God.

Schiller believed that the concept of a future life is still an open question but is non-contradictory. The idea of an immortal soul is also non-contradictory and possible. It is therefore "valid," although not yet conclusively confirmed. A scientific proof of the annihilation of the soul *is* impossible: science can neither confirm or deny it. If there is immortality, he argued, then there must be some sort of psychological continuity with our present identity. The afterlife, it such a conception is valid, shares the "general characteristics of mental life." Knowledge of a future life must be interpreted by knowledge of present life. If everything were utterly different, it would be meaningless to us.

Schiller examined the issue of death in this context. Is death ceasing to interact? Or a passage to a radically different "world" that shares nothing with ours? He compared death to going to sleep and reawaking, but of course in a different situation. It would be like entering a new world. He argued that many cultures have taken dreams as a form of contact with the spirit world. Dreams are not unreal, however little credence we give them. They leave open the possibility of insight into a future life. He also believed that the question of immortality makes a difference in human life, offering hope.

Since Schiller rejected Platonic metaphysics, the question arises whether he was departing from his humanist views in his philosophy of religion. Is the soul surviving the body compatible with his main views? Schiller uses the notion of possibility to deal with religious issues. He conceded that transcendent beliefs were speculative. However, he believes that religion must also survive pragmatic and scientific tests. "Like all other truths, they [religious truths] must fulfill a purpose, satisfy a need, and be verified experimentally."[3] Religion can be evaluated in terms of consequences. And there is a link between the question of the future life and psychic research, which is more subject to scientific investigation.

Schiller was a keen proponent of scientific research on psychic human abilities, both for its insights into human potential and its possible link to a future life. Like James, he believed that psychical research might shed light on the afterlife. The motive is its relation to immortality, not merely curiosity, although the latter is also involved. He believed philosophy could act as a stimulus to scientific research. However, he took a surprisingly detached approach to such research and its prospects.

Schiller argued that psychic research, once dismissed as pseudo-science, is on the frontier of science. By this he meant that such research was in its infancy, and like all new sciences, its methods require refinement. New sciences go through a period of collecting facts before researchers come up with a unifying theory or model. However, a collection of facts is not enough: Schiller defined science as "a systematic interpretation of a number of facts."[4] Psychic research lacks such a unifying interpretation on which researchers agree.

While in some respects there are plenty of examples of psychic phenomenon on which to draw, Schiller believed that psychic research suffered a drawback, albeit one not unique to it. Experiments in other sciences can usually be repeated. However, those in psychic research cannot. Psychic research shares this problem with astronomy but above all with the historical sciences, such as cosmology, and some branches of anthropology. In this respect, he thought, psychic research, as Bergson suggested, resembles history, which depends on the testimony of those present at the events. Such events cannot be repeated, and with each passing generation, the ability to check the facts of history fades. Witnesses die, and the scene of the events changes. Historians must reconstruct their accounts from sometimes contradictory statements, some of which may be secondhand. They must interpret the facts. Moreover, historical evidence does not accumulate, since its events are not repeatable, but occur only one time.

Similarly, psychic research involves questioning mediums and witnesses to a psychic occurrence. With the passage of time the memories of those present at such an event fade; with their death only written documents

remain as testimony. Thus the evidence loses freshness and value. But Schiller also believed, like R. Collingwood, that there are historical elements in all the sciences. Repeated observations over historical time reconfirm "laws of nature" or scientific laws, although there are biological species whose existence may depend on a single skeleton. Generally, he thought, the accumulation of evidence over time is more decisive than a single experiment.

However, psychic research differs from history in one sense since experiments could potentially be set up, researched and analyzed. There are also pragmatic tests of consequences, and of whether such knowledge proves itself "useful." Predictions that are verified would help to persuade many. Questions could be put to the "other side." Schiller believed that scientific investigation could proceed and this has actually come about, although perhaps not in the direction Schiller envisioned (telegnosis experiments).

Schiller also raises the question, why has there been so little communication with the "other side"? He argued that psychic communication may be difficult. "Souls" on the other side may find it difficult to establish lines of communication. Moreover, they may have little incentive to do so. He theorized that adjusting to conditions in a future life may take much of the energy of those who have passed on. Further, they may look down on the living or be relieved at having crossed to the other side. In this respect, psychic research faces a metaphysical problem that other sciences do not have to deal with, the actuality of souls, an afterlife and related possibilities. Such forces are beyond our control and thus there is a difference in kind between physical and psychic investigations. Another drawback to psychic research, then, is that there is less of a possibility of scientific control of conditions.

There is the further difficulty that he characterized as the inadequacy of operating conceptions for analyzing psychic phenomena, e.g. 'soul' and 'reality'. Psychology too is less than scientific, and its conceptions need refinement in order for psychic research to proceed profitably. Some of its terms are hopelessly vague or ambiguous. Schiller notes that science refines its conceptions over time, such that it may completely revise its initial notions. However, there is the possibility that in the end such seeming differences will prove fictitious. He is hopeful that the methods of science will vanquish the remaining difficulties.

Notes

1. "Man and God," this volume, p. 236.
2. "Dawinism and Design," this volume, p. 265.
3. "Pragmatism, Humanism, and Religion," this volume, p. 315.
4. "Philosophy, Science, and Psychical Research," in *Must Philosophers Disagree?* chap. 24.

15

THE METAPHYSICS OF EVOLUTION

§1. The discussion of the metaphysics of Evolution may come with the shock of seeming paradox on those who pride themselves on their complete exemption from metaphysical views and metaphysical knowledge. But in reality their surprise is quite uncalled for; and if they knew what metaphysics were, they would perceive that it was as difficult to avoid talking metaphysics as it is to avoid talking prose. It requires a real poet to avoid prose, and it requires a real metaphysician to avoid metaphysical assumptions. For ordinary men the choice is only between good and bad metaphysics as between good and bad prose.

For metaphysics is simply the science of the fundamental principles of all knowing and being, and it is impossible to act or think without assuming and implying some such principles. It is as impossible to carry on life without metaphysical principles as it is to carry on thought without logical principles. The only real question is whether our various metaphysical principles are to be consistent with one another and capable of being combined into a connected whole or not; and it is highly probable that, unless great care is taken, they will *not* be so consistent. Hence the object of the

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Riddles of the Sphinx: A Study in the Philosophy of Evolution (London: Swan, Sonnenschein, and Co., 1891), pp. 170–211.

systematic study of metaphysics is to render us conscious of the errors of the bad metaphysics of common life and common science, and to avoid such views of fundamental principles as will make nonsense of all things. In this respect metaphysics resembles logic, the science of the principles on which our thought proceeds; for logical principles also cannot be with impunity ignored. If we are ignorant of them, it is probable that our thought will misapply them; but to dispense with them is impossible. But though metaphysical and logical principles cannot be dispensed with, it is not necessary to be conscious of them; on the contrary, just as people reasoned rightly and thought logically long before Aristotle explicitly stated the principles of logic, so it is possible to discover and to use metaphysical principles in ordinary life and in science long before they are consciously appropriated by systematic philosophy.

And so it is not too much to say that every considerable advance in science has involved a parallel advance in our view of metaphysical first principles; and it would not be difficult to illustrate this by the history of metaphysical principles of acknowledged importance, which have owed their discovery, or at least their acceptance, to the progress of the other sciences. Thus it was nothing but Newton's discovery of gravitation which enabled the principle of Interaction to supersede the old conceptions of Activity and Passivity (cf. ch. iii. §10); and the full import of the metaphysical revolution which was thus worked by a physical discovery has hardly even now been realized in all philosophic controversies (ch. xii. §10).[1]

This explanation should suffice to render the assertion of metaphysical principles in Evolution a truism rather than a paradox, and to convince us that, if their importance is in any way proportionate to their scientific value, they will throw much light upon the ultimate problems of life. And it will be the object of this chapter to show, not only what the metaphysical principles underlying the progress of modern science are, but also that our expectations as to their value are likely to be more than fulfilled.

§2. The great method of science which has proved so fruitful of progress in modern times has been the Historical Method, which investigates things by tracing their *history*. Wherever it has been possible to apply it, the light thrown on the nature of things by the study of their history has been such that in most branches of science a rejection of the Historic Method would justly be regarded as a conclusive mark of unscientific perversity. And in its origin evolutionism is nothing but a special application and development of the Historical Method, the metaphysical assumptions of which it shares. Those assumptions are so few and so simple that ordinary thought would hardly think of calling them metaphysical; and yet they really involve some very grave metaphysical difficulties.

The fundamental assumption on which every form of the Historical

Method is based is that the thing investigated *has had a history*. And to say that a thing has had a history is to assert, not only that it has had a past, but that this past has a bearing upon and a connexion with its present condition.

These postulates are so easily granted on ordinary occasions that we are apt to overlook the metaphysical assumptions to which they commit us. The reality of history implies the reality of the past; i.e., the reality of Time and the causality of the past with respect to the present. For the conditions which render the application of the Historical Method valid are absent, if a thing has not existed in the past, or if its past is not causally connected with its present. And these conditions, which make it possible to speak of a history at all, will be found ultimately to involve, not only the reality, but also, as a further metaphysical postulate, the limitation of Time, or, at all events, of the past of the thing to which a history is ascribed.

But this very important point deserves further elucidation.

§3. The Historical Method supposes that the cause and explanation of the present state of a thing is to be found in its past, that its nature will appear when its origin has been discovered. But what if this supposition be an illusion? What if there is *no* real causal connexion between the past and present states of things, and the succession of their phases resembles rather the successive arrangements of a kaleidoscope, or of dissolving views in a magic-lantern, in which picture follows upon picture *without* any intrinsic connexion between them (cf. ch. iii. §11)?[2]

And again, what if things have had *no* origin? Surely the search for origins, the claim that the explanation of things is to be found in their history, is fundamentally false if the infinity of Time renders the whole conception of a beginning or origin a delusive prejudice of our fancy? If things have fluctuated to and fro from all eternity, in a confused and unintelligible series of indeterminate changes, if everything has passed into everything else by insensible and indefinite gradations, not in virtue of any determinate and discoverable law, but in consequence of the kaleidoscopic freaks of an irrational, inscrutable, and irresponsible "Unknowable," will not their nature baffle the utmost efforts of historical research? If men have "developed" into protoplasm and protoplasm into man, in an infinite number of infinitely various and capricious ways, what meaning can any longer be attached to the history of the Evolution of man out of protoplasm? If the Becoming of the world has really been infinite, no amount of history will bring us any nearer to its real origin; it is vain to sound the bottomless abyss of the past with the puny plummet of science. The Historical Method is futile, all theories of Evolution are false, and the nature of things is really unknowable.

And if we refuse to admit these conclusions, we must admit as the

metaphysical postulate of the Historical Method in all its forms, that things *have had an origin*, and their history a beginning. And so it appears that the ancient historians who began their histories with the beginning of the world, were prompted by a correct and truly scientific instinct; they felt that unless they began at the beginning, they would have to leave much obscure, and, that if a beginning was in the nature of things unattainable, all would be left obscure, and all explanations would ultimately come to nought. Thus the vindication of a determinate beginning and a real origin as the necessary pre-supposition of any historical account, commits us to the doctrine of a beginning of the world, or at least of the present order of things. But it does not directly compel us to assert the finiteness of Time. Until the nature of the infinity of Time has been investigated (in ch. ix. §11), we may here reserve judgment, all the more easily that we do not perhaps really require to limit Time for the purposes of the Historical Method. But we can avoid it only by a supposition at least as difficult. The origin which the method requires need not have been an origin of Time; it is conceivable that the world existed for an infinity of time, and then entered into the historical process of development at some fixed point in the past. Supposing e.g., that life had existed from all time in the form of protoplasm, it might suddenly have taken to developing more complex forms, and this point would form the starting-point of biology, and the *ideal fixed point* to which the Historical Method would go back. Or again, an "eternal" Deity may have existed always, and at some point in the past have created the beginnings of the world. In this second case the *ideal* starting-point of the Historical Method would be also the *real* beginning of the world (at least as a world); in the first, it would be ideal *only*, and mark the limit merely for our knowledge. But in either case, the Historical Method would be unable to distinguish the ideal from the real limit; it could not determine whether its starting-point was merely an instantaneous phase in the history, or whether it had not existed for an infinity before the beginning of change and beyond the reach of all history. It is thus an intrinsic limitation of the Historical Method, that even where it does penetrate to an apparent beginning, it cannot tell us whether it is the beginning of the *existence* of the thing or only of its *history*.

§4. Now it follows from the fact that modern Evolutionism is a special application of the Historical Method that it shares all the Metaphysical assumptions and limitations of that method. But in the course of its development it has superadded several others. And as its history affords the most instructive examples of how scientific progress unwittingly develops metaphysical conceptions (ch. vi. §§9, 16), it will be no real digression to trace the history of the theory of Evolution.

The evolutionism which has revolutionized the thought of our century

is the evolutionism of Charles Darwin, and confessedly arose out of an interpretation of the gradations and affinities of animal species in the light of the Malthusian law of population. That is to say, it arose out of a hint which the single science of zoology received from the science of sociology.[3] After revolutionizing zoology, it found its scope so much enlarged by that process, that it could be applied with success to many other sciences, such as botany, biology and anthropology, with especial appropriateness to sociology (from which it had received its original impulse), and even to psychology and ethics.[4] And every new application had the effect of bringing out more definitely the principles by which it proceeded.

Thus it appeared as the common result of all evolutionist histories, what had not before seemed a necessary characteristic of historical explanations, that they traced the genesis of the higher and more differentiated subsequent forms out of earlier forms which were lower and simpler and more homogeneous. And hence arose the first specific addition Evolutionism made to the Historical Method proper, which may be described as the assertion that historical research leads us from the more complex to the simpler, and "explains" complexity by deriving it from simplicity. And perhaps it is the aesthetic obviousness of this process, rather than any magic virtue in mere history, which has rendered evolutionist explanations so plausible and so popular. But it is this addition also which commits the evolutionist theory of descent to a course of metaphysical assertion by which it becomes at the outset a specimen, though a most favourable one, of the pseudo-metaphysical method (ch. vi. §3). And if in this it errs, its error is yet venial. It had achieved so much in the way of extending the borders of science, and thrown such a surprising light upon so many obscure problems, that we might well be pardoned for a greater blindness to the limitations of the theory than we have actually displayed. For we were able to carry the histories of things so much further back than we had ever expected, and were so wholly absorbed in disputing the details of those histories, that our dazzled and distracted reason could hardly muster the composure to inquire whether the historical explanations of evolutionism were successful as a whole, and whether their complete success would not bring out an inherent weakness of the method. The consciousness of this difficulty was generated only by the further advance of the theory of Evolution itself.

§5. That historical explanations should trace the development of the complex out of the simple was at first merely an empirical fact of observation; it was an interesting scientific fact, but not a philosophic principle. But when this turned out to be the invariable result of each new extension of the Historical Method, the idea was imperatively suggested that this fact was no mere accident, but the result of an essential law in the history of things. The development of the simple into the complex came to be

regarded as the higher law which all the applications of the Historical Method to the various sciences illustrated, and the theory of Evolution thereby ceased to be merely scientific, and became avowedly metaphysical.

The merit of the discovery and formulation of this great generalization belongs to Mr. Herbert Spencer, whose evolutionism is related to the biological evolutionism of Darwin much as the Newtonian law of gravitation is related to Kepler's laws of the motions of the heavenly bodies. And the step taken by Mr. Spencer was not only one of the utmost importance for the development of the philosophic implications of the theory of Evolution, but also thoroughly justified by purely scientific considerations. For it was only by such a generalization that the applications of evolution principles to the various sciences could be brought into a connection that explained the similarity of their evolutions. A merely biological evolutionism, e.g., could never have accounted for the evolution of the chemical elements (§9); but from the standpoint of a philosophic evolutionism the evolution in biology and in chemistry are instances of one and the same law.

§6. When Evolution has been recognised as the universal law of the Becoming of things, the position of affairs is, that all things are subject to a law, which explains the higher as the development of the lower, and that this law may be formulated by means of the historical data of this development. We have thus advanced beyond the conception of isolated things having a history, to the conception of a history of all things, a world-history; not only must things be taken in their historical context, but that context is one and the same for all.

And the world has not only got a history, but that history has a *meaning*, it is the process which works out the universal law of Evolution. The different sections of the world's history must be consistently interpreted with a reference to the universal law which they illustrate, i.e., interpreted as parts of the world-process.

And here we come upon the first distinct trace of the teleology which is inseparable from *all* evolutionism.[5] For when the phenomena of the world's evolution are subordinated to the general law of Evolution, their relation inevitably tends to become that of means to an end. All things happen as illustrations of, or *in order to* illustrate the general law of Evolution. But it is still possible to disavow the teleology at this point in the development of evolutionism, although it admits of little doubt that the success of evolutionism in combating other kinds of teleological explanation is due to its own teleology.

For the attraction which teleology has for the human mind is indestructible; an ineradicable instinct forbids us to renounce the hope of finding in the rest of nature that action for the sake of rational ends which is so prominent in that section of nature represented by intelligence. And, as we saw

(ch. v. §6), all knowledge is based on the anthropomorphic assumption that the course of nature corresponds to the operation of our minds. If, then, it *must* correspond to *some* extent for knowledge to be possible at all, the completer the correspondence, the more knowable will the world be, and the teleological explanation of things, which asserts this correspondence to the fullest extent, thus becomes a legitimate ideal of knowledge.

But before describing the fully developed teleology of an evolutionism which is fully conscious of its metaphysical implications, it is necessary to return to the question of the value and validity of the explanation of the higher by its development out of the lower, which has been asserted to be a prominent feature, not only in philosophic evolutionism, but also in its merely biological stage.

§7. In what sense and under what conditions is a history of the development of the lower into the higher a complete and satisfactory explanation of anything? Is the mere fact that such an evolution takes place sufficient to satisfy us? If so, we might without further inquiry credit a conjuror, when before our eyes he changes a mango-seed into a mango-tree, or an egg into a handkerchief. It is *not* sufficient that a fact should happen for it to be intelligible; on the contrary, many facts, like death, e.g., remain mysteries although they continually come under our observation. Hence it is not true that a mere history, merely as history, always explains the matter it deals with. In so far, therefore, as historical explanations of things seem satisfactory, it must be because they fulfil other conditions also.

What those conditions are will perhaps appear most clearly from an examination of the actual procedure of historical explanations. It appears from such examinations that one of *three* things may happen to a thing, the evolution of which is investigated by the Historical Method.

(1) It may be traced up to a point beyond which historical knowledge will not carry us; we may come to an unresolved and irresolvable residuum, which is the basis and datum of evolution, and which no evolution can explain.

(2) The thing to he explained may merge into something else, and cease to exist, or at least to be distinguishable as such.

(3) It may vanish entirely: it may be traced to its first appearance on the scene.

It is possible to illustrate each of these results of the historical explanation from various evolutionist theories. The first may perhaps be said to be the most common result in the present condition of our data. If we rigorously refuse to follow the evolutionist method beyond the data which are indisputably given, instead of prolonging our histories inferentially, we almost everywhere come to a point at which our evidence fails us. To take the most striking example, we can trace the history of life down to proto-

plasm, but we have no evidence that could explain how life arose out of lifeless matter. Strictly speaking, therefore, protoplasm is the inexplicable *datum* of biological evolution. For, though it so happens that protoplasm, or something very like that hypothetical basis of biology, is an actually visible substance, and so capable of further analysis by chemical and physical methods, there is nothing in its chemical and physical properties to bridge the gulf between them and the phenomena of life, nothing that renders it less of an ultimate fact *for biology*.

As an instance, of the second we may quote the supposed origin of the intellectual and the moral consciousness in the evolution of life. As we trace the history of intelligence downwards, we seem to pass from the highest reason of man by insensible gradations to a form of life in which nothing that can fairly be called reason can any longer be distinguished. In the lowest forms of life there is not only no reason, but hardly any feeling, to be detected. It is only by the analogy of the higher forms of life that we ascribe to protoplasm the rudiments of thought and sensation. And what is true of intellectual and sensory consciousness, is still more conspicuous in the case of the moral consciousness. There is no need here to go down into animal life, for we find abundant examples in what must be called human beings of what seems a total absence of all moral feeling. We can all but fix the date of the origin of the moral consciousness, all but see how it differentiated itself out of the other factors of savage life. Of the third result we should obtain an example if by any chance we could witness the creation or coming into being of anything.

§8. But let us consider what effect would be produced upon the actual results of evolutionist explanations, if the law of evolution could be really and completely universalized. The first case will evidently not bear universalizing. An evolution which starts with an original datum is *not* completely successful in explaining a thing. On the contrary, it is probable that we should attribute to the original datum the germs at least of all the qualities of the final product, and thereby render the whole explanation illusory. For if we have already got in the original germ all the differences and difficulties we detect in the final product, the whole explanation becomes a *petitio principii* and merely *unfolds* what we have taken care to put into the thing beforehand.

Neither can the second case be universalized. For it is clear that things cannot go on indefinitely being merged into other things, for the last thing would have nothing else for it to be merged into.

There remains, then, the third case, viz., that our theory of Evolution traces all things back to the point where they arise out of nothing.

But is this an explanation? Have we gained anything by showing laboriously and with an immense mass of illustration how A arises out of B, B out of C, etc., until we come to Z, and say that Z arises out of nothing?

And so we are, finally, confronted with this unthinkable miracle of the creation of all things out of nothing, as the final completion and logical perfection of the historical explanation! And yet it is an axiomatic principle of human thought that things cannot arise out of nothing, i.e., causelessly![6]

§9. And that origination out of nothing is not merely the logical conclusion to which a consistent use of the historical explanation must lead, appears from the fact that it has already been not obscurely asserted in certain evolutionist theories.

If we follow the bolder theories of the evolutionists, as illustrating the logical development of the method, without for the moment considering whether they are justified by the scientific data, we find that they derive all the phenomena of human life from the properties of original protoplasm. And they do not hesitate to carry us beyond this and to construct histories of "biogenesis," intended to account for the origin of life out of inorganic matter. They may attack the problem in a purely mechanical manner by regarding the phenomena of life as differing only in degree from processes of combination and crystallization, or they may also grapple with the logical difficulty of conceiving a transition from the unconscious to the conscious by theories of "mind-stuff" and the like. When once this *mauvais pas* has been surmounted, evolutionism finds more congenial material in the region of chemical and physical theories. Indeed, the most recent advances of chemical theory, as represented by Mr. Crookes' doctrine of *Protyle* (prothyle?),[7] enables it to construct an extremely interesting and complete cosmogony.

The importance of Mr. Crookes' views to the theory of evolutionism is so great, and they have as yet penetrated so little into the general culture of the day, that no apology is needed for dwelling on them at greater length than on the well-known theories of Darwin and Spencer.[8]

§10. Chemists have for some time been struck by the fact that a certain order and connection may be detected among the "elements." The working out of the periodic law, i.e., of the law of the natural grouping of the elements, is now one of the chief problems of theoretic chemistry. But to assert that the elements are not only different, but differ in a determinate manner, is to assert that there is a connection underlying their differences. The fact that the elements are capable of being arranged in a series, in groups of which the members resemble one another more closely than they do those of other groups, suggests that the seventy and odd substances which are accounted elements, because we have not hitherto been able to decompose them, are not final and ultimate facts. The law which explains their grouping must be regarded as anterior to them, and its operation may be described as the genesis of the elements. Hence it becomes possible to speak of the evolution of the elements.

But the analogy with biological evolution extends much further. It is

impossible not to be struck with the great quantitative inequality in the occurrence of the elements. Some of them are widely distributed and occur in large masses, whereas others only occur rarely and in small quantities. If, therefore, the elements are to be regarded as the products of a process of evolution, it is evident that the process has been much more favourable to metals like iron than to one like platinum or uranium. "A rare element, like a rare plant or animal, is one which has failed to develop in harmony with its surroundings," i.e., failed in the struggle for existence.

And it is even possible to guess at the cause. One of the most striking facts about the rare metals is that they occur in rare minerals composed of several of these metals, and often occur in these minerals alone. Thus rare minerals, like samarskite or gadolinite, may be found to contain three or four of the rare metals, samarium, yttriuni, erbium, etc., and their close and constant association evidently cannot be a matter of chance. Now if a soluble salt of one of these earths, e.g., yttria, be taken, and subjected to an extremely delicate and laborious process of "fractionation," by which the more soluble portions are separated out from the less soluble, it appears that the apparently elemental yttrium may be split up into several closely related substances, which, though in some cases their chemical properties may be indistinguishable, yet show marked differences in their spectra. And so, instead of a single metal, yttrium, with five bright lines in its spectrum, we get five substances with one line each in their spectrum. Similar results have been obtained with didymium and other metals, and quite lately (1889), even such common and apparently well-known metals as cobalt and nickel have been found to be constantly alloyed with a third substance, and the multiplication of such results seems simply a question of time.

§11. Now, says Mr. Crookes, what are we to make of these facts ? Are we to give up our tests as worthless, or are we to dub all these *membra disjecta* of an element elements? To do this we should require some *graduation* of the conception of elementicity, which would dispense us from putting the constituents of yttrium and didymium on a par with oxygen and carbon with respect to their elementicity. But Mr. Crookes propounds another interpretation, which may startle old-fashioned chemists, but has the merit of being both sensible and philosophic. It is a mere prejudice, he says, to regard a thing as an element, because it has resisted all our reagents and all our tests: for each test can only cleave it *in two*, can only divide a compound into two portions, which are elements *as far as that test is concerned*. But if a new test is applied, the supposed element splits up with perfect ease. All that can be inferred from our "elements" is that the tests which would subdivide them further have not yet been discovered. And these experiments suggest also that the supposed homogeneity of the particles of a chemical substance was based upon our ignorance. Atoms are *not*, as Sir

J. Herschel said, and Clerk Maxwell endorsed, "manufactured articles," exactly equal and similar, but, like all other real things, they possess *individual differences* and have an *individual character*. The individual differences appear so small only because of the minuteness of the whole scale, just as from a sufficiently lofty standpoint the individual differences between men also might appear as evanescent as those between the atoms do to us. And in chemical interactions these individual differences would be manifested by differences of atomic weight, not only between the different "elements," but within them. Some atoms of calcium might have the atomic weight of 39.9 and others of 40.1 and the "atomic weight" of calcium, viz., 40, would be only the *average* of the closely related groups. Hence if we discover any method of separating the atoms of the atomic weight, 39.9 from those of the atomic weight, 40.1 we should get two substances differing slightly from the ordinary calcium of the chemists, and differing still more from each other. This, or something similar, is what may be supposed to have happened in the case of didymium and yttrium. It is probable, then, that the splitting up of elements into "meta-elements" has been first observed among these rare metals only because they present greater individual divergences between their atoms than the rest, and perhaps it may be suggested that it was this very *individualism*, this lack of coherence and similarity between their more heterogeneous and loosely knitted constituents, which accounts for their comparative failure in the evolution of the elements.

§12. As to the manner of this evolution, Mr. Crookes' suggestion rests on astronomical facts. He infers from the fact that stars are not of all sizes, but seem to vary within certain limits, that there must be some agency to prevent the accretion of the stars beyond a certain point. He also infers from the fact that compound bodies are dissociated by heat, that the "elements," if compound, must also be dissociated at very high temperatures. Hence he supposes that in the centre of the hottest stars all elements are dissociated. But dissociated into what? Into that out of which they were all evolved, says Mr. Crookes, i.e., into prothyle, the undifferentiated basis of chemical evolution, the formless stuff which was the origin of all substances. And so, while from our point of view matter simply disappears at the centres of the hottest stars, when the temperature exceeds a certain point, it is really reconverted into prothyle, which does not gravitate, because it is anterior to the differentiation of gravitating matter and imponderable ether. But though (sensible) matter is thus apparently destroyed at the centres of the universe, this loss is compensated by the genesis of matter at its *confines*. The existence of limits to space Mr. Crookes supports by an ingenious calculation, that "if an unlimited world of stars sent us radiations, we should receive 200,000 times as much light and heat as we do receive, unless radiations are absorbed or intercepted to such an extent that

only 1/200,000 reaches us. This is so improbable that the conclusion that the universe is limited is with some emphasis declared by astronomy."[9] And there is the less reason to object to this limitation of Space, as it will subsequently appear a necessary postulate also on other scientific and philosophic grounds (ch. ix. 2–10). By this limitation of Space Mr. Crookes avoids the dissipation of energy by reason of its conversion into light and heat, and its subsequent loss by radiation into the infinite. He supposes that at the confines of the universe the ether vibrations constituting light are re-converted, first into prothyle, and then into atoms of ponderable matter, which, as soon as they are formed, commence to gravitate inward, and close their careers by reaching the larger stars, and there being again dissolved into prothyle.

Thus the atoms of sensible matter also are in a way individual beings. And both their individual and their chemical characteristics (as it were, their personal and racial character) will depend on the general physical conditions at the time and place of their formation, in accordance with the periodic law. And when formed a process of segregation and aggregation takes place among the atoms in consequence of which "those which have approximately the same rates of motion" cohere to form sensible aggregates of practically homogeneous matter, "heaping themselves together by virtue of that ill-understood tendency through which like and like come together, that principle by which identical or approximately identical bodies are found collected in masses in the earthy crust, instead of being uniformly distributed." There result certain "nodal points in space with approximately void intervals," which explains a difficulty which the theory of the evolution of the elements has to meet in common with that of the evolution of species, viz., the absence or scarcity of intermediate forms. And thus the larger aggregates first formed tend to absorb and force into conformity with their motions the surrounding atoms, and thus to grow disproportionately at the expense of the others: the common elements are those which have obtained a start in the process of genesis and improved their initial advantage.

Such is the life-history of the chemical atoms, for, like all things, they have a limited term of existence. They "share with all created (? generated) beings the attributes of decay and death" ; they are generated out of prothyle, according to the laws of the generation of matter, and when their due course has been accomplished, they return into that which gave them birth.

§13. But it is a more difficult question to determine what is the exact relation of this genesis of the elements to the life of the universe at large, and to decide whether it took place at a definite point in its past history, or continually renews its youth. For there is much that tells in favour of either view. Mr. Crookes himself frequently speaks of an original genesis of the

elements out of prothyle as an event in the past; he speaks of primitive matter as formed by "an act of generative force throwing off at intervals atoms endowed with varying quantities of primary forms of energy," and even suggests, on very adequate chemical grounds, that "it is extremely probable that the chemism-forming energy is itself dying out, like the fires of the cosmic furnace." Moreover we have already seen that a real evolution implies a beginning (§3), and shall see that a valid evolutionism implies also an end (§20), so that Mr. Crookes' own interpretation of his speculations may claim greater consonance with the ultimate requirements of evolutionist metaphysics.

On the other hand, it would seem that unless new atoms were continually generated to repair the loss of those which revert into prothyle, and to restore to the universe the energy which is radiated out to its confines, the theory will not only fail to dissipate the fear of "a final decrepitude of the universe through the dissipation of energy," but also invalidate the famous metaphysical postulate of science as to the conservation of the same amount of matter in the universe, at least as far as sensible matter is concerned. So it is not surprising to find passages in which Mr. Crookes asserts that "heat radiations propagated outwards through the ether from the ponderable matter of the universe, by some as yet unknown process, are transformed at the confines into the primary essential motions of chemical atoms, which, the instant they are formed, gravitate inwards, and thus restore to the universe the energy which would otherwise be lost to it." Hence it is perhaps preferable at the present stage of the inquiry to regard the continual generation and regeneration of the universe as the theory more in accordance with the spirit of pseudo-metaphysical evolutionism.

Thus, though stars and sidereal systems may have come into being and perished, formed matter must have been as eternal as prothyle, and it must be held that the universe itself at no time was not.[10] The universe is an ever active, self-sustaining, and self-sufficing organism, living on for ever, though all its parts are born and die, and nourished by the constant and correlative transformations of atomic matter into prothyle and of prothyle into atoms, and having in prothyle a basis which all things have been and will be, but which itself never *is*. For though prothyle is the ground of all reality and the basis out of which all things are evolved, it is itself never actual: when atoms are dissolved into prothyle, they apparently *perish*, when they are generated, they *arise out of nothing*: for prothyle lacks all the qualities which could make it knowable or perceptible (§14).

Such is the theory of the evolution of all things out of prothyle, a theory deserving of the highest praise, not only for its scientific ingenuity, but also as being the logical completion of the evolutionist method of explanation. For it has derived all complexity and all differences from the

absolutely simple and homogeneous, viz., prothyle. And as it depicts the universe as a perfectly self-existent whole, we may predict for it a very considerable popularity among the foes of "supernaturalism," as dispensing with the last apology for the belief in creation.

§14. But the very excess of the theory's success paves the way for its irretrievable overthrow of the method of which it is the logical result.

The prothyle, from which it derives all things, is in reality NOTHING, for it is devoid of all the characteristics of sensible reality. It is not tangible, because its particles, if it has any, would exist in atomic isolation; nor audible, because sound depends on vibrations in very complex matter; nor visible, because it is anterior to the differentiation of gravitating matter and ether, upon which the phenomenon of light depends. For the same reason it can have neither colour, nor weight, nor electric properties. It has no temperature, because heat is but molecular motion, and *ex hyp.* it precedes distinctions of chemical properties. In short, it has no qualities that could render it in any way perceptible; in the words of Empedocles,—

> *οὕτως οὔτ᾽ ἐπιδερκτὰ τάδ᾽ ἀνδράσιν, οὔτ᾽ ἐπακουστά, οὔτε νοῷ περιληπτά,*[11]

and if it could actually exist, its existence could not be known.

And so the transition of matter into, and generation out of, prothyle, would have every appearance of a couple of miracles, of a passing into nothing, and of a generation out of nothing. For let us suppose that we were somehow able to be present when this unperceivable prothyle developed some properties. What we should experience would be that at one moment *nothing* appeared to exist, and that at the next *something* came into being. And similarly in the case of the destruction of formed matter with definite qualities; it would appear simply to vanish away. Even, therefore, if we could be present at the evolution of prothyle, we should be none the wiser, and *any explanation would appear more probable than the miraculous generation of something out of nothing*.

Thus it seems to have been a mere delusion that prompted us to trace the origin of things out of what has no meaning, no qualities, and no reality *apart from that which it develops into.* In tracing the universe back to prothyle the Historical Method has reduced it to a fantastic and irrational nonentity, without form and without qualities, which differs from all other *nothings* only by its mysterious capacity to develop into everything.

§15. Shall we conclude from this result that the evolutionist method is worthless, after the fashion of many who have perceived this intrinsic weakness of a professedly "unmetaphysical" (i.e., pseudo-metaphysical) evolutionism? It is true that as an ultimate explanation of things it has

failed. It has reduced the "complex" to the "simple," until it arrived at things so simple as to be indistinguishable from nothing, at simple substances which had a meaning only with reference to the complex ones which they were supposed to explain. Must we then reject the whole method as an error and the whole process by which it traced the connection between the higher and the lower as a delusion? To do this would be to do violence to our best instincts: we cannot lightly or wholly abandon a method which has added such great and varied realms to science. But the difficulty is such as might convince even the most anti-metaphysical of the necessity of a systematic criticism of ultimate questions, and of an investigation of the metaphysical implications of the evolutionist method, as being alone capable of separating the valid and valuable elements in it from those which are delusive and absurd.

§16. Taken as the type of the pseudo-metaphysical method, which explains the higher by the lower, the theory of Evolution derives the actual reality from its germ, i.e., from that which was, what it became, *potentially*. Wherever we cannot conceive the lower as containing the germ of the higher potentially, the method fails. Thus it does not explain the genesis of consciousness out of unconscious matter, because we cannot, or do not, attribute potential consciousness to matter.

Now the metaphysical implications of the potential and the actual, i.e., of the theory of Evolution in its only tenable form, were fully worked out by Aristotle more than 2,000 years ago. Aristotle's doctrine of potentiality and actuality (*δύναμις* and *ἐνέργεια*) is the most complete form of evolutionism conceivable. It admits of no differences in kind anywhere in the universe. From the lowest form of matter to the highest form of mind, the lower is the potentiality of which the higher is the actuality or realization. And so we ascend by insensible gradations from the first matter (prothyle), which is merely potential and never actual (cf. §13), to the divine being which has completely realized all its potentialities, i.e., *is* all it can possibly be.

It is true, however, that Aristotle does *not* conceive this process from the potential to the actual to be one in Time, as the historical theories of Evolution are wont to do, but supposes the different degrees of perfection to *coexist in Space* rather than to *succeed one another in Time*. For he regards the world as eternal, and rejects the supposition of a secular progress in things.

But it is remarkable that he rejects it merely on the ground of lack of evidence. It would be absurd, he says,[12] on account of slight and brief changes, like the growth of the Nile delta, to suppose a general cosmic motion (*κινεῖν τὸ πᾶν*).

Thus, for lack of the requisite scientific illustration, the true theory of Evolution had to remain still-born for 2,000 years, until the progress of physical science could ratify the results Aristotle had anticipated! But as

soon as the scientific evidence was forthcoming, it was found necessary to revive Aristotle's speculations down to their special details, down to the very name bestowed upon the potentiality of Becoming, down to the assertion of the finiteness of the universe, and of the generation of its energy at its confines. And the correspondence between Mr. Crookes and Aristotle is the more valuable because it seems undesigned, and because the name of prothyle is (as its incorrect form shows) borrowed through the mediation of Roger Bacon.

§17. But Aristotle had the advantage of being a metaphysician as well as a scientist, and so was well aware of the metaphysical value of the symbol he used in his physics and called *prote hyle*. He recognized that it was nothing in itself, and so laid down the axiom, which is so contrary to our ordinary modes of thinking, viz., that though the potentiality is prior to the actuality in the order of time (*ἐν γενέσει*) and in the order of our knowledge (*γνώσει*) yet the actuality is really prior to, and presupposed by the potential (it is *φύσει* or *ἁπλῶς πρότερον*). That is to say, to take the old puzzle which really involves the whole question of philosophic method, though historically the egg comes before the chicken, it is yet an egg only in virtue of its potentiality to be come a chicken; the egg exists in order to the development of the chicken out of it. Or, to put it into modern phraseology, the lower is prior to the higher historically, but the higher is prior metaphysically, because the lower can be understood only by reference to the higher, which gives it a meaning and *of which* it is the potentiality.

It is clear that this derivation of all things from a pure potentiality, and the subsequent analysis of its meaning, explains, justifies, and reconciles the scientific and the metaphysical way of regarding things. Neither of them is gratuitous or useless, but each is adapted to certain purposes. In ordinary life and science, where we think backwards, and are more concerned with the past than with the future of things, the explanation by their causes, germs and potentialities is more in point. But in ultimate analysis none of these explanations are metaphysically adequate: things must be explained by their significance and purpose instead of by their "causes," by their ideals instead of by their germs, by their actualities instead of by their potentialities. And these two ways of looking upon things are reconciled by the fact that they regard *the same connexion of things* in reverse order; the process is one and the same, but we find it convenient to look at it now from the one end and now from the other.

§18. Applying these results of the Aristotelian analysis to the prothyle of evolutionism, it appears that the more certainly it can reduce the whole sensible and material world to a pure potentiality, the more necessary does it make the existence of *a prior actuality*, as the cause of the evolution of the sensible. And that actuality must be not only prior (in Time, if the process

is conceived as one in Time, or only in idea, or in both), but, by the very terms of the hypothesis, *external* to the evolving world, non-material and non-phenomenal. For since the *whole* of the material and phenomenal was supposed to have been derived out of the pure potentiality, the reality presupposed by that potentiality cannot itself have formed part of the material and phenomenal world.

And thus, so far from dispensing with the need for a Divine First Cause, the theory of Evolution, if only we have the faith in science to carry it to its conclusion, and the courage to interpret it, proves irrefragably that no evolution was possible without a pre-existent Deity, and a Deity, more over, transcendent, non-material and non-phenomenal.

And for the power of such a Deity to produce the world, the pure potentiality with which evolutionism starts is merely the expression. And the world as actual is prior to the germ which potentially contains it, simply because the world-process is the working out of an anterior purpose or idea in the divine consciousness. And as all things are, as far as possible, directed to the realization of that end or purpose, the real nature of things is to be found in their final cause, and not in their historical antecedents, which, just because they take precedence *in Time*, are means to an end, and of inferior significance *in truth*.

Thus it is not true, in the last analysis, that the lower explains the higher, or that the antecedent is truer than the final cause. On the contrary, it is only from the standpoint of the higher that the lower can be explained, and it is only by a recognition of final causes that the conception of causation can be cleared of its difficulties (cf. iii. §11). The evolutionist method, which was to have abolished teleology, turns out itself to require the most boldly teleological treatment.

§19. And the same conclusion as to the necessity of teleology may be reached, perhaps more clearly, from an investigation of the other metaphysical implications of evolutionism.

It has been already stated (§4) that the evolutionist method involved the conception of a world-history and the belief that that history had a meaning, and was capable of rational formulation. But we may now go a step further and assert that the conception of the world as an evolution is the conception of the world as a *process*. In applying to the world the conception of evolution, we apply to it the metaphysical conception of a process, and hence we continually hear evolutionists talking of "processes of evolution." But they hardly perhaps realize how much metaphysic is contained in that single word.

§20. In the first place, a process is necessarily finite and involves a beginning or starting-point and an end, as two fixed points, between which the process lies. For a process consists in A's be coming B; but if neither A nor B

is fixed, the becoming cannot be described as a process. In order to describe what happens we must have a definite and determinate starting-point in A, and a definite and determinate end in B. And even if the real does not, strictly speaking, appear to possess this definite character, we must *assume* it in idea for the purposes of knowledge. For our thought, and the language which is the expression of that thought, can only work with definite and determinate conceptions, and would be rendered unmeaning if the flux of the Real extended to them, and a term did not mean one thing to the exclusion of everything else. For this reason *mere* Becoming, which nowhere presents any salient phases which our thought can seize upon as fixed points for a process, is unknowable (ch. iv. §22, ch. iii. §13). Nothing that happens, therefore, can ever be *described* except as a process, for our thought cannot grasp nor our language express a becoming which does not indicate, however vaguely, something definite happening within fixed limits. If, e.g., we say, as vaguely as possible, "something became something else," we do at least imply that the ill-defined "something" was at least not anything and everything else; for in that case it would have *been* the "something else," and nothing would have happened at all, seeing that the "something" *was* the "something else" *already*, and so did not have to *become* it, and thus there would have been no becoming at all, and the original statement would have been false. But if both the "somethings" mean something with a definite though unspecified character, then the becoming is limited, in this case also, by the initial something at the one end and the final something at the other.

All this may be illustrated by the old and famous example of the egg and the chicken. Supposing we are considering the process of the hatching of the chicken, then the egg will represent the fixed starting-point A, and the chicken the fixed end B, and the process will consist in A's becoming B. Now let us suppose *per impossibile* that neither A nor B is fixed, i.e., that no chicken ever results. In that case we may give any name we please to the manipulations to which we subject the egg, but the "process" cannot be described as one of "hatching." For the end of the process is never reached, and we hatch nothing. But now suppose that what we had described by the definite term "egg" was not an egg at all, but, say, a piece of chalk. In that case surely our original description of the process of hatching a chicken out of an egg becomes ludicrously false and inapplicable. If A is not A, B is not B, and A (which is a delusion) cannot reach B (which is still more of a delusion) from A. And if our supposed egg was not even a piece of chalk, but an illusive appearance, an ever- changing Proteus, we can not only make nothing of it, but can not even describe what happens.

In saying, therefore, that the world is *evolving*, we say that it is *in process*, i.e., it is becoming something determinate out of something determinate. And Evolutionism shares this assumption of the knowableness of things, in

spite of their apparent flux, with all description and knowledge of the world, and only goes a step further than the simple utterance concerning the world, by being more conscious of all that is involved in the least that can be said. If, therefore, that initial assumption is justified (ch. v. §2), and if our description of the world as a process is *true,* the world must satisfy all the characteristics of that description. Hence, if the conception of a process involves two ideal fixed points, then *if we assert the process to be a real one,* its fixed points must also be *real fixed points in the history of the world.*

We may infer, then, from the supposed truth of our theories of Evolution that the world-process is a *determinate* Becoming, proceeding from one fixed point or beginning to another fixed point or end, and that all the events which take place within it are susceptible of having their places in that process assigned to them *as members of a series, and with reference to those fixed points*. In other words, all things are susceptible of explanation *from the point of view of the end of that process*, as tending towards, or aiming at that end. But such an explanation is *necessarily teleological*, an explanation by ends or final causes. If everything that is is grouped with reference to the end of the process, and has a meaning only in its context, it is what it is only as a means to the end of the process. The teleological explanation, therefore, is not only a perfectly valid one, but the only possible one (cf. §6).

§21. But it is teleology of a totally different kind to that which is so vehemently, and on the whole so justly, dreaded by the modern exponents of natural science. It does *not* attempt to explain things anthropocentrically, or regard all creation as existing for the use and benefit of man; it is as far as the scientist from supposing that cork-trees grow in order to supply us with champagne corks. The end to which it supposes all things to subserve is not the good for man, and still less for any individual man, but the universal End of the world-process, to which all things tend, and which will coincide with the *idiocentric* end and desires of the sections of the whole just *in proportion to their position in the process*.

Hence the world will not appear perfect from the point of view of the imperfect, and if it did, it would be most truly imperfect; it can be only from the loftier standpoint of the highest members in the hierarchy of existence that the world will seem to be what it ought, in their opinion, to be, and that all things will be really seen to be "very good." And to judge by the treatment which is meted out to man by the present constitution of things, and the still more ruthless disregard of the feelings of the lower beings, which nature almost ostentatiously displays, there is little in our position that could minister to the conceit of anthropocentric teleology. On the contrary, we shall be disposed to hold rather that the *spiritual value* of human existence is no greater in the spiritual cosmos, than is the *physical importance* of our earth in the sidereal universe.

And yet there is a grain of truth even in anthropocentric teleology. For after all, man is the highest of the beings we know, and the most highly evolved, and so the nearest to the end of things, and hence in a way entitled to regard the other beings he knows, representing lower phases in the process of Evolution, as means to *his* ends.

And this teleology is not only true and inevitable, but in no wise conflicts with the principle of scientific mechanism. For it does not supersede, but supplement it; it permits, nay, requires, science to carry its mechanical explanation to the furthest possible point, because it desires to know *the whole mechanism of the teleology*, and because it is confident that only so it most easily and most clearly displays the whole extent of the essential limitation and insufficiency of the mechanical explanation. It is only when the explanation of "unmetaphysical" science has reached the limit of its tether and ended in perplexity, that the consciously metaphysical explanation of teleology steps in and reinterprets the facts in their proper order. But any attempt to introduce teleological points of view in the purely scientific explanation of things must be resisted as fatal to the true interests both of science and of philosophy.

And in its reinterpretation of the scientific facts teleology again comes into no conflict with mechanism. For it is guided by the data amassed by science, and does not indulge in random speculation. It is only from a knowledge of the tendencies of things in the past that we are able to predict their future: it is by a study of what *has been* that we discover what *is to be*, both in the sense of what is about to, and of what ought to, be. The process which the theory of Evolution divined the history of the world to be, must have its content and meaning determined from the basis of the scientific data; it is only by a careful study of the history of a thing that we can determine the direction of its development, and discover the general principle which formulates its evolution. And it is only when we have discovered a formula holding good of all things that we can be said to have made the first approximation to the knowledge of the End (*τέλος*) of the world-process.

Thus the new teleology would not be capricious or random in its application, but firmly rooted in the conclusions of the sciences, on which it would be based and by which it would be regulated. It would stand in definite and recognized relations to the methods of the sciences, and would share in and stimulate their growth.

§22. The only danger to be guarded against, when a valid principle of teleological explanation has been obtained, is that arising from human impatience. We must not allow ourselves to forget that the teleological method just reverses the order of historical explanation. What comes first in science, comes last in metaphysics. It is in the higher and subsequent

that the explanation of the lower and anterior is to be sought. And instead of being simpler and more susceptible of explanation, the lower stages of the process are really the obscurer and more unintelligible, because they do not so clearly exhibit the drift of the process. Hence their explanation comes last, just because in the historical process they came first. We must not therefore hastily conclude that because the teleological method is true, it will be at once possible to give a teleological explanation of the physical laws of nature. The physical laws of nature are the earliest and lowest laws of the world-process, the first attempts at the realization of its End, and so are the very last to become intelligible. If we ever arrive at a teleological explanation of them, it will be only after we have *worked down* to them from the higher laws of the more complex phenomena. The basis, in other words, for a teleological interpretation of nature will not be found in sciences like physics and mechanics, but in sciences like sociology and ethics.

But if this principle is borne in mind, and no attempt is made at premature interpretation of the lower orders, which is bound to fail, we need not despair of ultimately being able to give a rational account of why everything is what it is and nothing else.

§23. But though enough has perhaps been said to elucidate the teleology of the world-process, its relation to Time yet requires further discussion. We saw in §2 that every assertion of the reality of history involved the reality of the Past, i.e. of Time, and a beginning of that history either in or with Time. But we must now consider whether the end, which is involved in the conception of a world process, applies also to Time, whether it is a real or merely a logical end.

We saw (§13) that it seemed not impossible to regard the world as a process which went on everlastingly reproducing itself, without beginning and without end. It might be that the development of prothyle into matter and of matter into prothyle should go on to all time, without change of character.

But though this would be a conception tenable in itself, it must yet be rejected as inadequate to the explanation of terrestrial history. The evolution of the planets and of the life they bear would be an utterly *irrelevant* concomitant of the evolution of prothyle. Terrestrial evolution would be an inexplicable and meaningless bye-product, which has aimlessly diverged on a bye-path very remote from the world's real process, viz., the formation of atoms at its confines and their subsequent destruction in the centres of the hottest stars. For in the majority of cases the life-history of the atoms would come to an end, without their reaching any further stages of development into inorganic and organic compounds, animal life and human reason at all. If, therefore, the world-process is *one*, either our terrestrial evolution has no part in it, or our view of the development of prothyle was

an imperfect one. For its development cannot include our terrestrial evolution. Biological, and even the later forms of chemical, development cannot be stated in terms of this merely chemical evolution, and so they must either be illusory, or our formulation of the latter is erroneous.

And that the latter is the alternative to be adopted, appears not only from the fact that it can not interpret a large portion of our data, and that the evolution of the earth lies without its scope, but also from this, that a constant generation and destruction of atoms is not properly a process at all. It could hardly be called even a history of the world, for it would be a history in which nothing ever really happened and no progress was made, and this history could certainly not lay claim to any meaning. For in so far as anything new happens, it happens on our planet and falls without the main process, while in so far as the main process is real our history is unreal.

If, then, as has been agreed, we must regard the process of Evolution as the same for the whole of the universe, it must be formulated so as to include the course of events on our earth, and similarly situated parts of the world. It is preferable, therefore, to construe the evolution of elements also in terms of Time, and to regard it also as exemplifying that general process towards heterogeneity which has been emphasized by Mr. Spencer. In this way the world-process will be one and will have a real beginning in Time, and also a real end—in the attainment of the maximum or perfection of that in which the process consists. For a process cannot go on for ever, but must pass into a generically different state of things when it has reached its highest development. To suppose anything to the contrary would be as erroneous as to suppose that motion could continue when all the bodies in the universe had attained to a position of equilibrium.

§24. Hence we need not hesitate to reject Mr. Spencer's theory of alternating periods of evolution and dissolution. This belief is one of venerable antiquity: it is found in the mythologies of ancient religions and endorsed by the speculations of ancient philosophers. Hence we may be confident that it is concerned with what appears a real difficulty to the human imagination.

That difficulty is twofold. It relates in the first place to the difficulty of really grasping the reality of the process and admitting a real increase and growth in the content or significance of the world. The force of facts compels to the admission that the world really progresses, really contains more than it did of the quality in terms of which the process is formulated, that its Becoming involves a progressive increase in Being. But in spite of the avowal of dynamical principles, the statical tendency to regard the amount of Reality as stationary, irresistibly re-asserts itself. The actual fact of growth cannot be denied, but its significance may be disputed. And so it is asserted to be merely *apparent*: it is really only the manifestation of the great *Cycle*, which reels off

the appointed series of events in precisely the same order forever. It is therefore a mere illusion to fancy that the total content of the universe changes: it is an equation which is represented by A = A = A . . . to infinity, in spite of the apparent progress of the phenomenal series from A to Z.

And, as will be shown (ch. x. §12), there is a sense in which this is true, but it is not true in any sense which is relevant to the explanation of the Becoming of the actual world. In as far as we and our world are real at all, in so far the change and progress of our world is real, and the world-process is a real growth in the content of *our* world.

The second difficulty to which the cycle-theory is due, is that men find it hard to conceive the world as reaching the end of any process without the question of—What next? And as they have not troubled to consider the nature of the eternal state of equilibrium, which would supersede the Becoming of the world-process (cf. ch. xii.), they have failed to perceive that it would render meaningless the question they ask. And so it seems easier to say—"Oh, when heterogeneity has reached its maximum, a return to homogeneity will set in," or "the systole will follow on the diastole of the world," or "the night of Brahma, in which all worlds are re-absorbed into the Absolute, recurs after each cycle of creation" (*manvantara*).

But really this belief in cycles of progression and regression is based upon a mere prejudice, indefensible alike on philosophic and on scientific grounds. Philosophically it is to be execrated; for it would be difficult to imagine any theory that rendered the world more meaningless than this pointless and futile fluctuation of things: the ceaseless play of systole and diastole may be the amusement of an insane Absolute, but it is not an end the human reason can ever hope to appreciate. Scientifically it is gratuitous: for, *ex hypothesi*, if all things in the universe are evolving heterogeneity, there cannot possibly be any *evidence* in favour of a reverse process towards homogeneity. The assertion, therefore, that a process of dissolution will again reduce the world to homogeneity is an entirely baseless speculation, necessarily unsupported by evidence. It is an arbitrary assumption, devised "for the pastime of eternity," by systems which mistake its nature. Neither our science nor our philosophy has any valid reason to stray beyond the limits of the world-process and the states which are directly inferred from its character.

§25. We may sum up, then, the results of the investigation of the metaphysics of Evolution as being that if our theories of Evolution are true, (1) the Becoming of the world is a process: (2) a *real* process, and not a process in or of thought: (3) with a determinate beginning and end in Time: (4) tending towards its perfection without any suggestion of a reversal: (5) the process proceeds from the potential to the actual, and hence the world possesses more actuality, more real significance and "Being" in the later stages

of the process than in the earlier. But as (6) in the order of Time the less perfect precedes the more perfect, that order reverses the true relations of things. Hence (7) the true method of philosophy is necessarily teleological, and explains the lower as the imperfect realization of the higher, and with a reference to the End of the world-process. And lastly (8), the End and meaning of the process must be determined from the historical data, the future must be predicted from the past.

And it is to this task of determining the meaning of the world-process, by means of formulas which hold good universally of the Evolution of things, that we must next devote our attention.

NOTES

1. It must not, however, he supposed that metaphysical advances are always conditioned by scientific progress, and that the sciences owe nothing to metaphysics. On the contrary, the obligation is reciprocal, and metaphysics react upon science and accelerate its progress. And in early times metaphysical knowledge is often far ahead of physical science. But in such cases the metaphysical conceptions are apt to prove barren, because no physical facts are known which exemplify them. And being thus destitute of illustration by reason of the backwardness of the physical sciences, the true metaphysics are often rejected in favour of less advanced principles, which may be supported by a plausible show of facts. It is pretty clear, for instance, that in the time of Aristotle Greek metaphysics were far ahead, not only of Greek science, but also of all but the most recent developments of modern science. The lack of progressiveness of pure metaphysics since is to be attributed, not merely to the disastrous introduction into speculative philosophy of the popular doctrine of God's "infinity" (ch. x. §7), but also to the fact that metaphysics had to wait until the physical sciences had reached a point which afforded the data for further metaphysical progress. Hence, as we shall see (§16), the metaphysical principles of Evolution were already contemplated by Aristotle, but rejected by him for lack of the scientific corroboration which they are now receiving.

2. Of course it is not intended to assert that there is *no* connexion between the successive pictures, but only that there is no *direct* connexion; i.e., that the earlier image is not the *cause* of its successor. And just as the structure of the kaleidoscope underlies the appearances in the one case, so the ultimate perversity of things (ch. v. §2, p. 137) would underlie them on the other hypothesis.

3. Cf. Darwin's *Life* I., p. 83, and compare Mr. Spencer's *Study of Sociology*, p. 438.

4. For a similar example, cf. *Study of Sociology*, p. 335, ff. (13th ed.).

5. For even biological evolutionism is not free from teleology of a sort. It explains structure as arising by natural selection *in order* to survival in the struggle for existence, and thereby puts it in the position of a means to an end.

6. Ex nihilo nihil; in nihilum nil posse reverti.

7. Prothyle is the proper form of the word, as it is the "prote hyle" of Aristotle,

derived through the medieval "yle." We have ventured, therefore, to substitute the correcter form.

8. For Mr. Crookes' views *v.* his Presidential Address to the Chemical Society in May, 1888 (*Journal of Chem. Soc.*, p. 487). Also his Address to the Chemical Section of the British Association in 1886.

9. *V.* Mr. J. G. Stoney's letter to the *Times* (4th April, 1888), in support of Mr. Crookes' speculations.

10. In this respect also there is a marked similarity between Mr. Crookes' cosmology and Aristotle's (cf. §16 s.f.)

11. Thus it is neither to be seen by men, nor to be heard, nor to be grasped by thought.

12. Meteorol. I. 14.

16

MAN AND GOD

§10. The conception of the Deity adopted by philosophic pantheism is from every point of view a mistake. Emotionally it is a mistake, because the philosophic Infinite is not God, and cannot satisfy the religious emotions. Scientifically it is a mistake, because it is not a principle which is capable of explaining anything in or about the world. Logically it is a mistake, because it is grounded upon fallacies and paralogisms.

Emotionally Pantheism is disastrous, because it has destroyed the soil on which alone human emotions can develop. Religious emotion is destroyed by the fact that the god of Pantheism is, to all intents and purposes, *nothing*. Moral activity is destroyed by the fact that the distinctions of Good and Evil, Right and Wrong, what is and what ought to be, must to Pantheism be ever and entirely unmeaning.

Scientific activity is destroyed by the fact that the world, in whatever way we look at it, must of necessity be meaning- and purpose-less. In short, it is in vain that Pantheism tries to avoid the confession that our life is a senseless illusion: it cannot vindicate the reality of our partial life against the all-absorbing claims of the whole.

Riddles of the Sphinx: A Study in the Philosophy of Evolution (London: Swan, Sonnenschein, and Co., 1891), pp. 326–374.

In the first place Pantheism is Atheism, and only a lack of courage or of logic can distinguish between them. For if all is God and all is one, all distinctions vanish. All is right and all is well, for all things exist but by the favour and support of the Infinite: to decry the perfection of any existing thing is to blaspheme against God. Hence all appeal to God is futile: it is for God to appeal to God against God. So being equally in all, God is not a factor in the course of life: God is a *quantité négligeable*, because equally shared by all things. To suppose that Pantheism leaves more room for religion than Atheism is as absurd as though we thought to diminish the inequalities of wealth by multiplying every man's property a thousandfold. So for practical purposes Pantheism and Atheism are the same, except that the latter has the frankness to call things by their true names. In the mouth of a Pantheist the accusation of Atheism is indeed ridiculous. For just as King Charles II. wittily declared during the Popish Plot, that he feared to be dethroned for his complicity in the plot against his own life, so the Atheist may plead against the Pantheist that in his impiety he offends against no one but himself, and that no one need interfere if it pleases God to blaspheme himself.

In the second place, Pantheism is no less fatal to the moral than to the religious sentiments. For it must regard all good and evil as relative and therefore as illusory. It is only from our perverted standpoint that the distinction of Good and Right and Evil and Wrong and imperfection exist; from that of the Infinite, from that which is, is what it ought to be, and everything occupies just the position it should. The "God" of Pantheism is not only impotent to alleviate our suffering—sufferings which he himself inflicts upon himself—but he is actually indifferent to them; the physical and metal tortures of myriad beings are actually seen to be "very good" in the eyes of "God." And of this diabolical indifference he can only be acquitted if we reflect that it must evidently proceed from ignorance. For God cannot be in any way aware of our woes, not only because an infinite God cannot be in any way conscious (§3), but because, from the standpoint of the Infinite, our whole phenomenal world must be *naught*, unfelt uncared for, and unknown. Our "real" world is as relative as good and evil, and like them would vanish *sub specie aeternitatis*. For the all-embracing Infinite admits of change as little as it does of imperfection or of Time. It is all things and has all things, and therefore no change could add or subtract from its substance. If, therefore, change appears to exist, it must be an illusion of our deluded sight, which does not penetrate to the Infinite. The world would be an inexplicable illusion, an unmeaning, incoherent pageant, dreamt by the grotesque creatures of the Absolute's unconscious dream, an unreal chase of shadows across the dark background of the Absolute, a phantasmagoria existing only in the fancy of the phantoms that

behold it. And so its fleeting shadows would not affect the Absolute, nor it them: not though we cry aloud shall we awake the sleeping "god" of whom we are the dream. Heaven is as dumb and irresponsive to the prophesyings of the philosophers of the Absolute as it ever was to the priests of Baal.

§11. And earth also: for the Absolute is no less incompatible with the methods of human science. An infinite God is as much out of the relation to human knowledge as to human feeling. Pantheism explains nothing, just because it professes to explain everything. For a principle which may be regarded as the ultimate ground of all things cannot be used as the explanation of anything in particular. Hence we arrive at the paradox that the ultimate ground of all things, and cause of their existence, is the cause of nothing in the nature of that existence. In other words, for the purposes of sentiment, Pantheism resolves itself into Atheism.

It follows that there is an irreconcilable conflict between Pantheism and all the finite methods by which men have sought to understand the world. The evolutionist method especially, regarding the world as a process, is pledged to deny the Infinite in every form (cp. ch. vii. §20). For nothing infinite can be in process, or if it is in process, the process must be unintelligible.

The vulgar hear and admire such explanations of things as that "the Absolute can realize itself only in the world," that "it becomes self-conscious only in man," and even that "the history of the world is the process whereby the Absolute returns into itself enriched." But if such phrases can, upon reflection, satisfy philosophic minds, the whilom adversaries of anthropomorphism must have come to content themselves with the flimsiest metaphors of a very sorry anthropomorphism.

If, e.g., the Absolute is realized in the world, then either the existence of the world is necessary to that of the Absolute, or it is not. If it is, the world must either have existed for ever, for the Absolute to be real, and it is absurd to speak of the Absolute as the First Cause (ch. ii. §10), or the world and the Absolute have come into existence together. But if the Absolute has come into existence, it must have become either out of something or else out of nothing, for it cannot have originated out of itself before it existed itself. If out of nothing, *cadit quaestio;* it is admitted that nothing is the ultimate ground of existence, and that existence is ultimately irrational. If out of something else, then that something and not the Absolute is the real ground of existence ultimately, and the same question must be raised about it, and so on to infinity.

If, on the other hand, the world was not necessary to the existence of the Absolute, then why was it generated? If it was generated for any reason, then why did that reason impel the Absolute to generate the world at the time it did, rather than at any other? Did the Infinite begin to find infinite

time hang heavily on its hands, and if so, why did it *begin* to do so? Or if the world was generated for no reason, if we are driven to admit that the Absolute cannot be moved by reasons, is not this the most absolute indeterminism (cp. App. §4), the most complete confession of the irrationality of the world? For what explanation is it of the world to derive it from an uncaused, unprovoked, and (as we shall see in §12) impossible change in the Absolute?

And even supposing that in some utterly inscrutable way the Absolute somehow had something to do with the generation of the world, what could it possibly have effected thereby? What difference could creation make to it? What could it realize by creation that was not already real? It must be supposed to have created all things out of itself, seeing that it could create them neither out of nothing nor out of something outside it. But it already *was* all things, and contained all things; and so could neither realize itself nor anything else any more than it was realized already.

And the idea that the Absolute attains to self-consciousness in man is equally untenable, when analysed. The Absolute either contains self-consciousness already, and then it is nothing new, or it does not, and then the same question arises as to how anything can come into being within the circle of an all-embracing being. For the paltry excuse that all things exist potentially in the Absolute before the creation, but not actually until the world is created, will not help the difficulty. Potential existence, as we saw, is nothing (ch. vii. §18), nothing but a reference to a higher actuality. And in this case there is no higher actuality to refer to; for it would have to be an actuality that could dispose the *all-including* Absolute to realize its potentialities. We require something to explain how in the Absolute potentiality can be something and something different from actuality, to explain how the difference between them could arise. If the world was ever potential, then why did it *become* actual?

And besides, the idea that our consciousness is of any value to the Infinite surely displays the most extreme extravagance of human arrogance. Why should the Absolute become self-conscious in man? Because he happens to be the highest being with which our limited knowledge is acquainted? But why should not the unnumbered stars contain myriads of beings incomparable loftier than the obscure denizens of a paltry planet? What, then, is the use of man, and the use, in any case, of countless beings? Why should the Absolute strive to become imperfectly self-conscious in the lower stages of spiritual existence, when it might do so perfectly in the highest? What sense is there in attaining by a long, laborious process, what might have been attained with instantaneous ease? Assuredly, neither the human nor any other *reason* can ever discover the meaning of a world-process, which takes means to an end which might have been attained

without them. To our "finite" minds such a process must always appear an absurdity; it is a process which can reveal nothing but the ultimate insanity of all things.

And if the means of the world-process are thus absurd and irrational, its end is no less meaningless. For how can it "enrich the Absolute"? Can any process which takes place within the infinite All add one feather's weight to its substance, diminish or increase by one jot or tittle the being of that which is all things and has all things? Will it not be what it is alike amid the crash of worlds and amid the throes of their birth? It would be paying the utter absurdity of this conception of the Infinite concerned in a process, an unmerited compliment to liken it to a spider spinning elaborate cobwebs out of its own substance, and then, finding that there was nothing else to catch in them, proceeding to enmesh itself in its own web, and after infinite labour succeeding in reabsorbing its own production. And yet such melancholy absurdities are put forward not by one or two philosophies, but by nearly all who attempt these ultimate questions at all, as a deepest truth about the nature of things! It is perhaps fortunate that the obscurity of their language conceals this final void from the generality of men, but it exists in all philosophies which make an infinite God their first principle.[1]

§12. Pantheism, then, destroys the reality of the world-process. But we may go further and say that it is for similar reasons equally incompatible with all Change or Becoming. This is not, it is true, a consequence Pantheists have been willing to admit, since the days of the Eleatics, but all this proves is the pitiful inferiority and inconsistency of subsequent Pantheists. For the impossibility of Becoming follows incontestably from the reality of All.

For let us suppose that the world has a content or meaning A, i.e., A of the quality or attribute in which its meaning consists. Now let us suppose that a change takes place, and its content becomes *a*. Now whether the change of A into *a* be an increase or a diminution, the amount of its Being has changed. Its content or meaning has increased or diminished. But the Absolute can neither increase nor diminish the amount of its Being, for it already is and has all. Its content, therefore, must be expressed by the equation A = A = A to all eternity, i.e., it is unchangeable.[2]

If, therefore, changes take place in the phenomenal world, the inference is either that that world is not the absolute All, or that the absolute All is a delusion. If, however, we identify or connect the changing world with the Absolute, we must necessarily hold that its changes are *merely* phenomenal, illusions of our sense which do not affect the Absolute, that properly speaking, i.e., from the true standpoint of the Absolute, change is impossible. And this is precisely what the Eleatics did: they showed that the con-

ceptions of the changes and motions which appeared to our sense involved contradictions to our reason (cp. ch. iii §8), and inferred from this that the sensible world was an illusion. And, we may add, an inexplicable and impracticable illusion. For what theory or practice is possible of life, if change, the fundamental characteristic of the world, is to be treated as nought? To us change is real, and change of content is real; to us there is a meaning in saying the world is poorer in virtue and in wisdom when a good and wise man dies. Does it not then sound like a derision of our whole life to say the All is as rich as before, and all our changes and our losses are illusions? A view of the Deity which leads to such conclusions has nothing to do with human life; it must be banished from all minds that wish to retain their sanity.

For the examination shows that if the Absolute is real, the relative is absolutely unreal, and that the philosophic account of the real world thus leads to the curious conclusion that it is supposed to be explained by a principle which reduces it to absolute unreality. The pantheistic conception of the Deity absorbs the world into God, and then discovers that the latter cannot assimilate it: so it is compelled to reject it as an illusion, and arrives at the self-contradictory *reductio ad absurdum*, that from the standpoint of the finite, God is nothing, while from the standpoint of the Infinite, the world is nothing, whereas the standpoint of Practice they both agree in the corollary that the world is irrational and inexplicable.

§13. But here we may fitly introduce the hackneyed objection which may long have seemed the only refuge of the belief in the Infinite. These difficulties, it may be said, only show that our finite minds cannot grasp the Infinite, and that the Infinite, therefore, must appear a mass of contradictions from the standpoint of the Finite. The abstractions of our finite reasoning produce a show of contradiction in what is perfectly consistent from the standpoint of the Infinite. The true attitude of the human mind in such matters is a reverent confession of weakness, which admits as a *faith*, and bases upon *feeling*, a mystery which is insoluble to our finite *reason*.

Such has ever been the language of hard-pressed absurdities, when driven into a corner. They envelop themselves in a cap of darkness, and seek to escape under the protecting gloom of our ignorance.

But in reality this pseudo-religious agnosticism has as little to do with religion as it has with reason. Agnosticism is a superstition equally baleful and hateful, whether it masquerades in the vestments of religion or of science (as in ch ii.), and the worship of the Infinite is an idolatry precisely on a par with the reverence for the Unknowable. They are both self-contradictory phantoms which the human mind has conjured up out of the boundless maze of error, and hypostasized and materialized by parallel paralo-

gisms. And if we look at the magnitude of the issues involved, it must surely be admitted that the worst of all idolatries is that which requires the human mind to sacrifice its faith in the rationality of things, in its own competency to solve the problems of its life, in order that it may fall down and worship the contradictions it has itself set up.

The argument from the "finiteness" of our minds will not bear the light of day. Its very statement is involved in all sorts of insuperable difficulties. It declares, e.g., that our minds cannot grasp the Infinite, and yet, in the same breath, goes on to assert what it had asserted to be impossible. Just as the very assertion of the Unknowable involved its knowableness (ch. ii. §3), so the very assertion of the Infinite involves either its finiteness or the infinity of the mind which *somehow* claims to be conscious of its existence. For if the Finite could not really grasp the Infinite, it could not so much as become aware of its existence. We must dismiss, then, the absurd contention that our minds cannot grasp the Infinite. If it had been true, they would assuredly never have formed so troublesome a conception as that of the Infinite. But the inquiry into how the human mind arrives at the idea of the Infinite is no less perplexing. We may suppose the mind itself to be either finite or infinite. Now if the mind is finite, and if the whole phenomenal world is finite also, there can be no ground either in thought or in things for assuming an infinite, and the saying that the Finite cannot understand the Infinite is true merely because there is nothing to understand, because the Infinite is an utterly gratuitous fiction. In order, therefore, to infer the existence of a real Infinite, either thought or things must in a way be infinite. Now, as has been shown (ch. ix. §5), the infinity cannot lie in things, for if Space and Time are ultimately infinite, the world is unknowable. It remains that the mind is infinite, that the so-called Finite is of like nature with the "Infinite," and that there is *no* difference in kind between them. But if the mind forms the conception of the Infinite in virtue of its infinitude, that conception also must follow the laws of the mind's thought, and can as little contradict the laws of logic as its thought upon the most trivial of finite things. As, therefore, no matter whether we call the mind finite or infinite, there can be no such thing as a real difference in kind between the Finite and the Infinite, but only a difference in degree, the Infinite is not exempted from the sway of the laws of logic and of sane thought, and hence no indulgence can be shown to the attempt to combine contradictory attributes in the same conception. The Infinite must be judged by the logical rules applicable to all things, and in dealing with the Infinite, as with everything else, a contradiction must be taken as an indication of something amiss somewhere.

§14. But perhaps it will be admitted that the belief in the Infinite is not a matter of reason, not susceptible of logical statement. It is a matter of

feeling, and not even of all feeling (for it is not a matter of perception, ch. ix. §5), but of subjective emotion. Now this plea may be admitted in so far as it seems to recognize that the belief in the Infinite is reached by an unprovoked and ungrounded leap into the Void, which can be justified neither by reasoning nor by sense-experience. But the feeling to which it appeals must assuredly be of the most curious description. It affords an intuitive and immediate consciousness of the Infinite, which is superior to all argument. It assures men not only of the existence of the Infinite, but also of its infinity. Its perception is so delicate that, even in the most ignorant and unthinking, it can distinguish with absolute certitude between real and practical infiniteness. So when it asserts that God's power is infinite rather than incalculably great, we are bound to credit it against all the opposition of our reason and of our senses. Such an emotion would truly be the most fearful and wonderful thing in our mental furniture, and we should have to contemplate it with unceasing amazement if there were any ground for supposing that it existed.

As a matter of fact it has already been shown that our feelings not only do not require the assumption of an Infinite, but vehemently repudiate it (§10). A deity which is unknowable, inactive and indifferent to all that happens in the world, is not one which "finite minds" can either grasp or cling to.

§15. We have been considering hitherto the inferences to be drawn from Pantheism in its bearing upon life and science, and shown how unacceptable it is from every emotional and scientific point of view. But the real root of the doctrine, the real reason of its persistence, in spite of its more or less obviously unsatisfactory consequences, is to be found in certain supposed requirements of logic and metaphysics. Hence it is necessary to subject the logical validity of the philosophic conception of the Absolute or Infinite to a most careful scrutiny. As the result of that scrutiny, it will appear that the logical arguments for Pantheism are either fallacious or inconclusive.

§16. It must be observed, in the first place, that the conception of a whole or totality, which is used in the arguments concerning the infinity of the Deity, is ambiguous.

When, e.g., we speak of the attribute of omnipotence, we may mean two very different things. To say that the Deity possesses "all" power may mean either that he has *all the power there is*, and can do all that can be done, or that he can do anything and everything. We may assert by "all" either perfection with respect to the attributes in question (power, goodness, wisdom, etc.), or an unlimited maximum. But the first of these conceptions is really that of a finite whole. To say that God can do all that can be done, is to imply that there are things impossible even to God, is to

assert that He is limited by an ultimate constitution of things. And, as we shall see (§17), this is the true conception of a totality or whole; the true interpretation of the "all" is "almighty," the true reconciliation of "omnipotence," with the finiteness, which is the condition of reality. But on the other hand, the generality of men do not realize that a whole or "all" is necessarily finite, and that an infinite whole is a contradiction (cp. ch. ii. §20; ch. ix. §8), and imagining that an infinite maximum can be a whole, they attribute infinity to God. But in reality an infinite whole is impossible, and the infinite is only the negative limit of the finite, which can exist only in idea, and can never be actual.

§17. Now it is evident that if we can make good what has been asserted above, viz., that a whole is necessarily finite, the assumption of an infinite Deity becomes logically inadmissible. It will follow not only that the All must be finite, but that the Infinite is an absurd and misleading appellation of the All of Pantheism. But we must go further and assert that not even as a finite whole can the All be *real*, and thereby destroy the whole logical basis of Pantheism. For the infinite or absolute "God" of Pantheism is nothing but the hypostasization of the conception of the world as a whole, nothing but the abstract conception of a totality of things, nothing but the logical form of a universe as such. And as every world, irrespective of its content and character, may be equally conceived as a whole, it was inevitable that the Deity of Pantheism should be absolutely indifferent to the world (§11, 12) and to everything happening within it. For the inference from the worst world, and the most discordant content to such an Absolute would be just as valid and just as cogent as from the most perfect. God would in any case and under all circumstances be the totality of existence.

But this reasoning contains flaws which thoroughly vitiate it. In the first place, a whole is necessarily finite, for two reasons. (1) Because all our thought deals only with conceptions, and conceptions are necessarily finite (cp. §12 note): hence we, in applying to a thing any conception of our thought, in this case the conception of a whole, necessarily imply that the reality is as finite as our conception. (2) Because, according to its only true and valid definition, infinity consists just in the impossibility of *completing a whole* by successive synthesis (cp. ch. ix. §3). If, therefore, the world is a real whole, it is for that very reason *not* infinite. But this proof of the necessary finitude of wholes may be said to show not so much that Pantheism is mistaken in deifying the universe as a whole, as that the expression of "the Infinite" is illsuited to describe the totality of things. Yet even granting this, it would be no slight help to the cause of clear thought; if the Infinite could be finally banished from the vocabulary of philosophy.

§18. Secondly, even permitting Pantheism to regard its deity, the

absolute whole, as finite, it is yet impossible to regard it, in the way Pantheism does, as a real and all-embracing existence. For such a view would involve a mistaken conception of the relation of a whole to its parts.

For the conception of a whole is finite also in this, that it is modelled upon the wholes given in our experience, and that we have no business to extend the analogy off-hand to a whole in which the relation to its parts would be fundamentally different from anything with which we are acquainted.

The wholes which fall within the range of our experience may be conceived in two ways, and in two ways alone. They must either be regarded from without, and given as wholes external to the spectator, or regarded from within, as the sum of their parts. In the first case alone, however, are the parts at once given as parts by direct inspection, and is the whole a *reality* which includes the parts. In the second, the whole has to be constituted by the successive synthesis of the parts, and hence it is always ideal and exists for thought only.

Now the universe, as the totality of things, is necessarily a whole of the second kind, since it is evident that there cannot be any existence outside it, which could regard it from without. But if so, it follows that the All is not a real whole, but literally "the sum of things"; the universe, as a whole, is simply a collective expression for the sum of its "parts." In other words, the whole is simply the ideal limit of its parts, and not anything which has real existence apart from them. The individual existences in the universe alone possess reality, and are the "first substances," and their inclusion in a supposed Absolute is simply an unpardonable repetition of the old Platonic fallacy of a transcendent universal, apart from and superior to the real individual. But the All is nothing beside the individual substances who compose and define it, just as the British nation is nothing real by the side of the individual Britons. For though it may be claimed that such a whole is in a sense real, it is not real in the sense in which Pantheism asserts the reality of the Absolute. The reality of a nation depends on the existence of its individual members, and simply expresses the fact that they act together in certain ways. Hence such a whole might be destroyed without the destruction of a single real individual, if, e.g., *all* the members of a nation joined other communities.

It follows, therefore, from the analysis of the relation of a whole to its parts that our experience of the real world affords us no analogy for the existence of a *real* whole, which should be both all-embracing and more real than its parts: the universe is not anything to which this our human conception of a whole can be applied. Thus Pantheism, in deifying the All, is proceeding upon a mistaken logical analogy, and we have here traced to its logical source the practical equivalence of Pantheism and Atheism. For

if "the sum of things" cannot be a real being, it can have no real effect upon life.

§19. Thus Pantheism must resign itself to the conclusion that no valid meaning can be given to the assertion that God is the All, unless we frankly depart from the facts of the phenomenal world. For it is possible to conceive the *ideal* of a third way of relating a whole to its parts. It is possible to conceive parts which should be logically implied in the whole, and incapable of existing except as parts of the whole. In such a case the whole would be as real as the parts, by which it was irresistibly and certainly suggested, so that in stating the part we should *ipso facto* state the whole, and in asserting the existence of the part we should also assert the existence of the whole. And in this way, and in this way alone, we could argue from the given reality of the parts to the reality of the whole of which they were parts.

And at first sight it would seem as if this conception of a whole was not only logically thinkable, but also actually realizable. But this would be an over-hasty inference. For owing to the discord between thought and reality which at present exists (cp. ch. iii. 14; ch. v. §2), we cannot argue from an ideal of our thought to a corresponding reality. The Real is "contingent," things cannot be deduced, and facts cannot be demonstrated. At the best, reality is only realizing our ideals, and will not attain to them until the world-process is completed.

And so it is not surprising that the apparent examples of such a relation of parts to wholes, with which reality as yet presents us, turn out upon closer inspection to be delusive. All real things are more or less capable of being parts of many wholes, of being wholes that can vary their parts. There is never any real necessity to regard a thing as the part of any single whole, and hence we can never conclude by a sure and single inference from the given existence of the parts to that of any particular whole. The inference from the part to the whole is always precarious and probable, and never attains to strict and absolute certitude. We can find no examples even in the ideal regions of mathematics. There is nothing in an angle to compel us to regard it as the angle of a triangle, or in a semicircle to prevent us from treating it as a simple curve, without reference to the circle of which it may form part. Nor do the relations of a body to its members realize this ideal. The mutual implication of members of bodies is in all cases more or less transitory and impermanent. The parts of all bodies are more or less capable of existing independently of their wholes, while all bodies have the power more or less of repairing the loss of their parts. In the lower organisms especially, the mutual independence of whole and parts reaches an astonishing height. To say nothing of leaves and cuttings capable of developing into complete plants, of the grafting of one plant upon another of a

totally different order, we find that crabs will repair the loss of their legs, claws and eyes, that a lizard will part with its tail with the greatest equanimity, and that the arms of a male cuttle fish can sever themselves from their body and embark upon the romance of life on their own account.[3] Even in man operations like the transfusion of the blood of one organism into another, and the transplantation of skin from one body to another, are perfectly easy. Hence we cannot from the mere sight of a member infer the existence of the body of which it was a member, although, as knowledge grows, we can define within gradually narrower limits the *sort* of body it must belong to. But the mere sight of an arm will not enable us to assert positively *whose* arm it is, nor even establish its connection with a body; for it may have been cut off from its body, nor will it tell us whether the body is alive or dead. Everywhere we find wholes which can dispense with their individual members with disgusting facility, and parts capable of standing related to many and various wholes. The connection is never permanent and unconditionally valid.

But perhaps it may be answered in the case of an *all-embracing whole*, like the universe, the source of error arising out of the multiplicity of wholes to which the parts may be related is eliminated by the fact that there is only one whole of which the individual existences can form part. There can be no misinterpretation of the parts of the universal whole, for everything that exists must form part of the Absolute.

This rejoinder, however, would rest upon an illusion. It appears correct only while we treat "the universe" as an abstract conception, and only because the real question has already been begged in the mode of statement. In speaking of "the universe," i.e., of an empty category, its *unity* has already been covertly assumed, i.e., it has been assumed that no misinterpretation of the parts was possible, that they could only be related to a single whole. But it is a delusion to suppose that when things have been shown to form part of *a* whole, they have also been shown to form part of *any particular* whole. Accordingly, as soon as ever it is attempted qualitatively to determine our category, i.e., to infer that the individual existences must form part, not of *a* universe as such, but of a real universe *of a certain character*, the old difficulty recurs, and it appears that they might form part of all sorts of qualitatively different cosmical constructions, and hence are *not logically implied* in any *one* of them. Taking, that is to say, the individual existences as our data, we can so arrange them as to construct "the universe" in many different ways, and our data do not compel us to assume any particular kind of universe. For instance, we are attempting to interpret the facts of life upon the assumption of the ultimate rationality of existence, but we were in Book I. forced to admit that they might also be interpreted consistently with its ultimate irrationality. But which of these two

theories about our data is right, is just what we want to know, and what Pantheism does not enable us to decide. To tell us that things may be regarded as a universe by means of the conception of a totality, is to tell us nothing of the least importance, and to offer us this trivial truism in lieu of a God, is to mock our demand for a reality with the unsubstantial shadow of a logical distinction. Pantheism, therefore, has elucidated and explained nothing by applying to the world the abstract conception of a whole; its Deity is indifferent to the world, because an abstract conception carries with it no reference to any definite content; its Deity is not real, because it is merely an irrelevant play with logical counters; its Deity is not valid, because it requires an unwarranted manipulation of its data.

§20. The conception, then, of a whole necessarily inferred from its parts is an ideal and not a reality, and as such cannot guarantee the reality of the pantheist's All, nor affect our belief in the self-sufficing reality of the individual existences. And yet it is interesting to observe that, even if it could be realized, it would after all vindicate the reality of the whole only at a cost of concession to the parts which more than compensates them for the loss of their logical self-existence.

For though it would have to be admitted that the whole possessed a sort of honorary priority, the necessary implication of the whole and the parts would yet have to be really *reciprocal*. For in order to secure the certainty of the inference from the part to the whole, the part must be incapable of being anything but the part of *that* whole, and as essential to the whole as the whole is to it. The parts could not escape from the whole, but neither could the whole destroy the parts. If the whole is necessary, the parts would also have to be necessary. There could be no such thing as coming into or passing out of existence in the relation of the parts to such a whole, no possibility of regarding their relation under the category of cause and effect. And even the most self-assertive individual might well endure to be called a section of the Absolute, if this relation guaranteed to him eternal and changeless existence.

In this reciprocity of mutual dependence doubtless lies the true solution of the difficulty, and the true reconciliation of the conflicting claims of the individual and the whole of which he is a part, a reconciliation equally remote from either extreme, from an intractable self-assertion of the parts no less than from an all-absorbing encroachment of the whole. And though it is an ideal which as yet finds no exact counterpart amid the imperfections of the real world, we have yet some reason to believe that the world is approximating towards it. The individual is becoming more valuable to the whole as certainly as he is becoming less able to dispense with it. As the intrinsic worth of the individual rises, so does his social value. The greater a man, the greater the void his loss leaves, the more keenly is it felt

by the society in which he had been a factor. And it is one of the cruelest necessities of our imperfect state that we are not able to mourn our dead as we ought, that love and grief are transient, and, like ourselves, are swept away in the rushing flood of life. But even so, we may, in this approximation to a mutual dependence of part and whole, catch another view of the ideal we first caught sight of at the end of chapter viii., that of an eternal and harmonious interaction of individuals, who could not exist except as members of a perfect society, in a society which could not dispense with the services of a single member. But though such a whole would be heavenly, it would not be God, for it would be a hypostasization of the interaction of the existent. And still less would it explain what after all needs explanation most, viz., the why of the world-process, why the world of which we form "parts" at present falls so far short of the purity of our ideals. If, therefore, we choose to hypostasize the Interaction of the Existent under the name of the Absolute, we must do so with a full consciousness that it is out of relation to the world as it actually exists, and can explain nothing in it.

But there is no need to hypostasize it; no reason to assume an "Infinite" to envelop and sustain the "Finite." To make the Infinite the metaphysical support of reality only involves us in superstitions as endless and as groundless as those which supported the physical world on an elephant, and the elephant on a tortoise, etc., etc. But just as little as the physical world requires an Atlas to bear it up, as little does the spiritual world require an infinite Absolute to confer reality upon it. And just as the celestial bodies maintain their positions by their mutual attractions and repulsions, so the Finite suffices to *limit itself*, and the individuals are real and are also limited in virtue of their actions and reactions upon one another. All things are finite and relative, and the relative is relative to itself, and not to an absolute and unlimited nonentity, which must needs be out of all relation to the Real.

§21. The preceding sections have shown that the logical grounds on which Pantheism was based are fallacious and unnecessary, and as it had already been shown to be equally valueless for religious, moral, and scientific purposes, every possible basis and motive for asserting its validity has really been disposed of. Nevertheless there remains a strong metaphysical prejudice in favour of Pantheism which cannot be uprooted without an inquiry into the most fundamental question of metaphysics, viz., that whether existence is ultimately one or many.

If the ultimate oneness of all existence is maintained, the doctrine is *Monism*, if existence is asserted to be ultimately of two kinds, e.g., Matter and Spirit, it is *Dualism*; if plurality is asserted to be ultimate, it is *Pluralism*.

Of these, Monism has maintained a sort of preponderance, because it

appeared simpler and more satisfactory to "the philosophic craving for unity." On the other hand, it is incurably pantheistic, and disposed to dissolve away all the distinctions between things.

Dualism, again, seemed able to preserve the all-important distinction between good and evil, for which Monism had left no room; but it harmonized neither with the apparent plurality of the world nor with the philosophic demand for unity.

Pluralism, lastly, had the advantage of departing least from the phenomena of the real world, but it seemed difficult to carry it out consistently.

Of these theories of ultimate existence, the intermediate theory of Dualism, which falls between two stools, may be rejected at once. It was virtually disposed of with the rejection of the ultimate difference of Matter and Spirit (ch. ix. §16).

The real battle has to be fought out between the champions of the One and of the Many, between Monism and Pluralism. And contrary to the opinions of most previous philosophers, we are inclined to hold that the Many is a far more important principle than the One, and that Pluralism, consistently interpreted and properly explained, is the only possible answer to the ultimate question of ontology.

Monism, on the other hand, really has nothing to recommend it. It might indeed be possible to applaud the statement that philosophy *aims at* the unification of the universe, if it were not promptly made a pretext for asserting the reality of this unity, in the face of facts which deprive this so-called unity of all practical value, and reduce it from an assertion of a real oneness to that of a merely abstract unity. It would be more to the point if Monism could show a little more *unanimity* in the world, even at the expense of a little unity. And if more attention had been paid to the *aiming at* unity, the results would perhaps have been somewhat more satisfactory, and Monism might have recognized that a unity aimed at, and worth aiming at, is for that very reason not yet attained. If they had taken the trouble to interpret their theory strictly, Monists might have realized that though Monism would be an excellent theory when the world-process was ended, it is for this very reason quite inapplicable and extremely mischievous while it is still going on.

Then again, the supposed simplicity of Monism is a great delusion. It does *not* simplify the understanding of the world, to deny plurality, in order to assert its abstract unity. Or if the One of Monism be taken as the unit of Number, it certainly requires an astonishing amount of simplicity to see any difficulty in passing from one to as many as are wanted. For how is it more difficult to assume many ultimate existences than one? One would have thought that when *one* was given, it was easy to count a *thousand*. If, therefore, the One of Monism is the unit of Number, the unity of ultimate

existence is no simpler than its plurality, while if it is an abstract One, Monism is unable to explain plurality at all.

And unfortunately, Monism has no choice of evils; it is forced to interpret the One as an abstraction which excludes all plurality. No Monism can explain the existence of plurality: how the One became the Many, or how, having become, the Many can be distinguished from the One. For the One, being the sum total of existence, could generate the Many only out of itself, and however generated, their generation could not serve any purpose, nor could the Many really be independent of or distinct from the One. In whatever way we put it, the existence of the Many must be illusory: they are of the substance of the One, and can neither disown their parentage nor dissever themselves from the One which was and is and will be all things. The Many can have no real existence from the standpoint of the One, and no *raison d'être.* For supposing even that the One found the single blessedness of eternity tiresome in the long run, and created a diversion by mysteriously "pouring itself out" into the world, there was yet no reason why *plurality of types* should not have sufficed, and this in no wise explains what is after all the real crux of plurality, viz., its indefinite multiplication of imperfect individuals under the same types, the lavish prodigality and meaningless repetition of the Many. Why were so many millions of fleas essential to the happiness or comfort of the Absolute ? Would not a single specimen, nicely got up, have sufficed to show what absolute wisdom combined with absolute power could effect in the region of the infinitely little and infinitely disagreeable? *Et mutato nomine de te*, oh monistic philosopher, *fabula narratur*!

It appears here again that monistic Pantheism has to deny the reality of our world of Becoming and plurality. All systems which profess to explain the world from monistic principles have to make this transition from the One to the Many, and not one of them can make it intelligible.

They labour in vain to describe it by inexplicable and unintelligible processes, which severely tax their resources in the way of obscure metaphor. But in reality the gulf between the One and the Many can be bridged by no fair or valid means: nor has the self-sacrifice of monistic philosophers, who have discarded all restraints of prudence and consistency in order to precipitate themselves into it with a reckless devotion worthy of Mettius Curtius, availed to close the gulf.

§22. We may reasonably conclude, then, that Monism is a failure, that by assuming *unity* at the outset it incapacitates itself for the task of explaining phenomenal *plurality*, and *a fortiori* for the still higher task of really *uniting* the Many in a significant *union*.

But is Pluralism any better off? Pluralism, by assuming the ultimateness of plurality, does indeed avoid the difficulty which is so fatal to Monism. It starts with an immense advantage over Monism: it has no

need to explain away the appearance of plurality. But unless its position is very carefully stated, with more precision and consistency than pluralist philosophers have hitherto bestowed upon it, it has considerable difficulty in explaining the possibility, not of the abstract unity it rejects, but of real union.

This difficulty may be elucidated by the example of the greatest of pluralist systems, that of Leibnitz, and the criticism upon it. Leibnitz asserted that the world was ultimately composed of spiritual beings, "windowless monads," each of whom ideally included, but really excluded all others. And this statement in its natural sense might have been taken as a forcible expression of the fact that the mutually impenetrable consciousnesses of spiritual beings yet communicate through the common world of thought. But an unappreciative criticism could easily discover obscurities and flaws in Leibnitz's expressions. It was observed that if the monads were absolutely exclusive, they could not communicate at all, and hence no world could exist, nor plurality in it, and that Pluralism thus supplied its own refutation. If, on the other hand, the Leibnitzian conception of God as the Central Monad, including all the rest, was to be taken seriously, there was an end to the substantiality of the others, and here again Pluralism was abandoned.

Such criticism, though it disregards the spirit, if not the letter, of Pluralism, may serve at least to bring out the subtle way in which Pluralism includes and involves the unity of things.

It is absurd, in the first place, to suppose that Pluralism asserts the existence of the Many in a sense and under conditions which would destroy the very fact it is most anxious to explain. The exclusiveness and self-existence of the Many must not be so interpreted as to make nonsense of the whole position and to stultify the whole solution of the problem of plurality. For it is clear that if the Many were absolutely exclusive and incapable of having any connection or communion with one another, there would *be* no Many, and no Plurality could exist. Each monad would form a world by itself, would be a One as impervious to criticism and as unconscious of all outside influence as the One of Monism itself. Pluralism would be no better than Monism. When, therefore, Pluralism asserts that the Many as a matter of fact exist, it must be taken to have thereby implied that *they are also capable of existing as many*, i.e., the possibility of the interaction of the Many is implied in their very existence, and does not require any special proof.

And Leibnitz might well take for granted that as the Many *do* interact, they must also *be capable of interacting*, and that it was unnecessary to demonstrate that what actually existed was also capable of existing. He himself was far too well versed in Aristotelian philosophy to suspect that his critics would require him to justify the possibility of the potentiality,

where the actuality was obviously given. To such criticism, from the Leibnitzian as from the Aristotelian standpoint, there could be but one answer; viz., that the potentiality was nothing without the actuality (ch. vii. §17), and consequently that the One, as the possibility of their interaction, was nothing without the Many, and that the real reason of things must be sought in the Many.

Yet as this possibility of the interaction of the Many is the One, Pluralism is in a way based upon Monism: the Many presuppose the One. But not in any sense which can affect the substantiality of the Many. The One which is presupposed by Pluralism is the most meaningless of all things; it is a mere possibility of the interaction or co-existence of the Many; it is a mere potentiality which has no actual existence except as an *ideal* factor in a *real* plurality. It is the actual interaction of the Many that gives a meaning to the One; Monism becomes possible only when it has been included and absorbed in Pluralism. For if each of the many individual existences had never actually exerted its power of interacting with the others, no world would have existed. The terms "one" and "many" would have had no meaning and there would have been no occasion for Monism to be invented in order to explain how the many could be *one*.

Monism is thus essentially *parasitic* in its nature; it is a theory which becomes possible only on the basis of the real fact of plurality. And it is equally dependent upon Pluralism for its further development. It is a theory parasitic also in this, that it construes the One on the analogy of the Many and after a fashion derived from its knowledge of the phenomenal world with its many substances; in other words, it hypostasizes it. But by this hypostasization it refutes itself; by treating as a real and transcendent substance this co-existence and possibility of the interaction of the Many, this immanent and impersonal ultimate nature of existence, it reduces the real world of existences, which it set out to explain, to absolute unreality. And all this in order to be able to assert the reality of a unity which, on its own showing, lies beyond all human thought and feeling! It would be a sufficient justification for Pluralism that it protects us against such absurdities.

§23. But Pluralism can do more than this: it not only vindicates the actual plurality of things, and explains how the unity implied in plurality may be treated without dissolving all reality in an unmeaning One, but it can assert unity in a higher sense, which no Monism can reach.

To assert the unity of the universe at present is to assert what is either trivial or false. If by unity is meant the abstract unity of the category of oneness, if unity means merely that in thinking "the universe" we must from the nature of our thought imply its oneness, or, again, if it means the possibility of the interaction of the Many, the statement is the most trivial and unim-

portant that can possibly be made. If by unity is meant something incompatible with plurality, it is false. If, again, a *real unity* is meant, it is false; for a real and complete union of the elements of the world does not exist. The interactions of things are not harmonious, they are not at one but at war.

But Pluralism can hold out to us a hope that such a real union may yet be achieved. The Many, who at present interact discordantly, may come not only to interact, but also to act together; and their perfect and harmonious interaction would realize the ideal of a true union, of a real unitedness, as far superior to the imperfect union of our present cosmos as the latter is to the abstract unity of the underlying One.

Thus, in a way, the One is Alpha and Omega: as the basis of the Many, it is the lowest and least of things; as their perfection and final harmony, it is the highest and last of things; but it is Pluralism alone that can distinguish between these two senses of unity, which Monism inextricably confounds.

Thus satisfaction is given to the legitimate claims alike of the One and of the Many, in a higher synthesis which transcends the extremes both of Pantheism and of individualism. Unity (in the sense of union) is admitted to be a higher ideal than plurality, but for that very reason it cannot be treated as real in an imperfect world. For the explanation of our existing world the first sense of the One is irrelevant, as being included in the mere fact of the world's existence, whereas the second is inapplicable, as being not yet attained. In the interpretation, therefore, of *our* world Pluralism is supreme; it is the only possible and relevant answer to the ultimate question of ontology. It is only by asserting existences to be ultimately many that we can satisfy the demands either of the Real or of the Ideal.

And it is a mere prejudice to suppose that there is any intrinsic difficulty in the ultimate existence of many individuals; for the conception of ultimate existence is no more difficult in the case of many than of one. All thought must admit the ultimateness of some existence, admit a limit to the question of the origin or cause of existence; for otherwise it would have to confess to the absurdity that the ultimate cause of everything is nothing or unknowable (§1). But as we saw in chapter ii. (§5), our thinking faculty, when rightly interrogated, does not require such an infinite regress of reasons, but readily acquiesces in the self-evident, and the question as to the cause of existence as such is idle and invalid. Our inquiry must come to a stop somewhere, and this limit, the ultimate ground of existence, must be either the irrational or the self-evident and self-sufficient. Now of these alternatives, it has been made abundantly evident that monistic Pantheism adopts the former, and reduces the world to the irrational, to "the delirium of an insane God," whereas Pluralism, by uniting the Many in an eternal harmony, necessarily arrives at the latter, at a state in which the ever-present reality of perfection permits no question into what lies beyond and before the actual.

But though this reconciliation of the One and the Many affords us once again a view of the Ideal we have already twice caught sight of, once in discussing the relation of the individual to society (ch. viii. §19), and once in analysing that of the part to the whole (§19), we must leave its elucidation to a later period (ch. xii.), and content ourselves for the present with settling the comparative merits of Monism and Pluralism. Irrespective of the hopes Pluralism holds out for the future, it is enough that it is superior in the present. Whatever the difficulties that beset the question of ultimate existence, they are the same for both, the same whether existence be ultimately one or many. And we are clearly bound in our inquiry to draw the line at a point where the conception of ultimate existence will throw light upon the phenomenal existence of our world. The world exists, and its existences are many; Pluralism admits the facts, and thereby affords a valid theory of the world; Monism can not admit the facts, does not explain the world, and therefore is not a valid theory of ultimate existence or ontology.

§24. An elaborate investigation of the doctrine of the infinity of the Deity has been found necessary, but it was fully warranted by the magnitude of the issues involved, and of the results attained. For it ought to have resulted in a firm conviction that neither religion nor science nor philosophy has anything to gain rather than everything to lose by the assertion of this doctrine. It ought to be at length clear to all that the Pantheism which is arrived at by deifying the abstract category of the unity of the universe arises out of paralogisms and confusions, is unable to explain the interaction of existences which do not require it, and, were it conceivable, would plunge all speculative and practical philosophy into irredeemable chaos.

The assertion, therefore, of the finiteness of God is primarily the assertion of the knowableness of the world, of the commensurateness of the Deity with our intelligence. By becoming finite God becomes once more a real principle in the understanding of the world, a real motive in the conduct of life, a real factor in the existence of things, a factor none the less real for being unseen and inferred. For it is much that the Deity can once more be made the subject of inferences, that intelligible reasons can once more be given for the existence of God, and that the Kantian criticism of the "physico-theological proof" (ch. ii. §19) falls to the ground. And it is a sufficient concession to the instinctive humility of religious feeling to admit that the Deity is *unknown* to us as *yet*, that He is a God who "wears a fold of heaven and earth across His face"; we must not permit it to ascribe to Him the suicidal attribute of unknowableness.

And the discussion of the relations of Monism and Pluralism should have largely brought out also the nature of God's finiteness. The finiteness of God depends on the very attributes that make Him really God, on His personality, on His being, like all real beings, an individual existence. God

is one among the Many, their supreme ruler and aim, and not the One *underlying* the Many. The latter theory makes the Many inexplicable and the One indifferent. God therefore must *not* be identified with Nature. For if by Nature we mean the All of things, then Nature is the possibility of the interaction of the ultimate existences, and of these God is one. And the existence of these ultimate existences explains also how God can be finite; He is limited by the co-existence of other individuals. And from His relations to these other existences, which we have called spirits (ch. ix. §31), arise all the features of our world which were so insoluble a puzzle to Monism—its Becoming, its process, and its Evil—and in them also must be sought the explanation of the arrangement of the world down to its minutest detail. For as the existence of these spirits is an ultimate fact, God has no power to annihilate them; the most that can be done is to bring them into harmony with the Divine Will. And this is just what the world-process is designed to effect, this is just *the reason why the world is in process*. For if the divine power were infinite, it would be unnecessary to produce the harmony with the divine will by a long and arduous process. As it is *not* infinite, occasion arises for the display of intelligence and economy, for that adaptation of means to ends which has always been justly esteemed the surest ground of a belief in God.

And this same limitation is also the general explanation of Evil; the world is evil because it is imperfectly harmonized with the divine will. And yet as God is not all things, He can be an "eternal (or unceasing) tendency making for righteousness," and need not be, as on all other theories He must be, the responsible Author of Evil. For when once the identification of God with the whole of Nature is given up, the evil in the world may be due to that element in it which is not God, to the resistance of existences God cannot destroy and has not yet reconciled. And there are many points about the specific character of evil which bear out this interpretation.

§25. For let us compare the deductions from such a theory of the nature of Evil with the facts we find. We start with a number of spiritual beings struggling against and opposing the Divine Power, which may overpower, but cannot destroy them. What is to be done? To leave them in the full possession of their powers and intelligence would be to give them the power to do evil, to reduce the spiritual order to a chaotic play of wild antagonisms. To destroy them is impossible. But it is possible to do the next best thing, viz., to reduce their consciousness to the verge of non-existence. In such a state of torpor it would be possible to induce them to give an all but unconscious assent to the laws of the cosmos, and gradually to accustom them to the order which the divine wisdom had seen to be the best, and the best means to attain a perfectly harmonious co-operation of all existences. And as they grow more harmonized, a higher development

of consciousness, and a higher phase of life becomes permissible. Nevertheless every advance in consciousness renders possible a correspondingly intense relapse into antagonism or Evil, nor will such relapses cease to be possible until a complete harmony of all existences has been attained.

Now do not the facts accurately correspond to this scheme? The history of the world begins with beings to whom we can hardly attribute any consciousness or spiritual character. This obliteration of consciousness is dependent on Matter, which has been recognized in the last chapter (ix. §§27, 28) as a mechanism for depressing consciousness. Out of these lowest and hardly conscious beings there are gradually evolved, in periods which to us appear almost "infinite," higher beings with a higher consciousness and higher powers. And on the whole they display progressively higher phases of association and social harmony. The abuse of their higher powers for evil purposes, on the other hand, though possible, is confined to very narrow limits. For the physical and social laws of life form an effectual system of checks upon the selfish lawlessness of individuals, and prevent evil-doing beyond a certain point. However evil the intentions of a refractory spirit may be, his actions must involve some degree of submission to the cosmic order. And not only is he forced to recognize this order, but in proportion as he fails to mould himself in accordance with it, he tends to lose his power of disturbing it, by reverting to a lower and less dangerous type.

To say that an evil-doer makes a beast of himself is true in more senses than one; for by his indulgence in his evil passions he tends to lose the higher consciousness which raises men above the beasts. His vices destroy his moral and intellectual perceptions even more surely than they do his body. For the lowest depth alike of ignorance and of wickedness is unconscious: the utterly degraded criminal has lost the moral and intellectual insight, the conscience and the intelligence, which the beast has not yet acquired. And even physically, could his life be prolonged, he would revert into an animal state. For as evil is *anti-social*, the extreme evil doer would be outcast from society, and so become unable to secure the manifold appliances of civilization. He would have to depend for his livelihood on his own unaided resources, on his strength of hand and fleetness of foot. His expression would be coarsened and animalized by his life. The higher mental activities would find no scope for their exercise, and the part of the brain by which they were expressed would be atrophied by disuse. For lack of the means of making clothing, he would have to grow a thicker covering of hair; for the lack of tools, he would have to develop his nails into claws.

Nor is it inconsistent with this view that more intelligent and cold-blooded wickedness maintains itself in society, and often too in honour. For it is just by its obedience to the laws, divine and human, by the moderation which, from self-regarding prudence, avoids offences which a supe-

rior power would surely punish, that such wickedness is possible. The criminality is confined to intentions, and not permitted to issue in overt acts. A bad man in a modern society is probably worse than a bad man 10,000 years ago, because his intelligence is higher. But his instincts will not be as brutal, nor his actions as outrageous as those of his predecessor. He will be more consciously selfish in the choice of his ends, but he will not be as ruthless and barbarous in the choice of his means. He will, e.g., beware of a free indulgence in manslaughter, for the conditions of civilized life render murder too dangerous a pastime. Physically, also, his conduct will be more prudent, for he will find that the more complex dissipations of modern life are more exhausting to his physical powers than the simpler debaucheries of the savage.

Thus Evil is impotent and infra-human, in our world at least, rather than superhuman. And such a character of Evil serves to further the world-process indirectly also. It makes the attitude of resistance to the Divine Purpose ridiculous, contemptible, and disgusting, as well as futile. The adversary of God is not a defiant fiend, armed with archangelic powers and irreconcilable in the intense consciousness of his undying hate, not the Demon we had been wont to fear, but the beast we had been wont to despise, a sordid swine, whose narrow outlook over the nature of things is limited by the barriers of his garbage, and the boundaries of his sty. And so the nature of our world confirms what we ought to have conjectured beforehand, viz., that the divine wisdom does not permit the world to be made a playground for devils, but imposes upon Evil disabilities which minimize its power to thwart the purposes of God and to affect the course of history.

§26. And so we find that Evil is that which resists the Evolution of the world, and fights a losing battle against the tendencies of things. It consists in this, that the end is not yet, that the purpose of the world-process is still being achieved, that the discordant elements are still being harmonized, and that hence what *is* cannot yet realize what *ought to be.*

But though on this account Evil is an inseparable element in our world, an ineradicable element in all existing things, yet from the beginning *Διὸς δ᾽ ἐτελείετο βουλή*,[4] and constrained chaotic wills into the scheme of cosmic order. But this cosmic order of perfect harmony is as yet unattained, and so the world contains a negative element of the unknowable, impersonal ("Matter"), indeterminate ("Becoming"), impermanent ("Time"), indefinite ("ignorance"), and imperfect (pain)—in short, of Evil; it is a world of Becoming and of Time, and not a true cosmos. But yet it is ever progressing towards perfection; Evil and Imperfection is that which is ever vanishing away. It is impermanent itself and the cause of impermanence in the imperfect, the lawless and *a-cosmic* factor, which must be continually transcended and ultimately eliminated in the process towards perfect

Being. And of that process all phenomenal things are transitory phases, that bear within them the curse of change and the seed of death, and we ourselves also must pass away. We are imperfect phases in the interaction between God and the Egos, the reflexes of relations that are not satisfactory or harmonious, and hence endure but for a season. Hard then as is our lot, and bitter as are the pains the flow of Time and the impermanence of life inflict, it is yet not ill that the all-receiving gate of Death should open up to us a prospect of promotion into a more abiding state of being.

§27. Thus the complete account of man's relation to God is that our actual selves, and the world in which we live, are correlated results of an interaction between the Deity and ultimate spiritual beings or Egos, of whom we form the conscious part (ch. ix. §§22, 24). The imperfection and transitoriness of this world of ours is conditioned by the unsatisfactory and unstable nature of the relations between the Deity and the Ego, and to this also must be ascribed the all-pervading element of Evil.

But as the Deity is one factor in this interaction, i.e., in all things, there is within and throughout the world also an element of good, that makes for a more perfect harmony between God and the Egos, ourselves and the world. Thus God is *immanent* in all things, a constant, all-inspiring, ever-active Force. And yet God is not dissolved in the All, which was the heavy price paid by Pantheism for the immanence of its "God," but has also a real personality, a truer and transcendent existence for Himself. In this way we solve the old controversy of the transcendence or immanence of the Deity, by showing how God is in different ways both immanent and transcendent, and oppose to the Pantheistic Monism, which could not explain the world, a pluralistic Theism, which can.

§28. And if this doctrine seem at first somewhat to detract from the effective supremacy of God, and to shock the ears accustomed to an unthinking worship of the "Infinite," and if the ascription of Evil to the limitation of God seem even to reduce His power to a shadow, let us reflect, and realize that omnipotence becomes impotence in the absence of resistance, that resistance also is the measure of power. Hence, though it may seem a task unworthy of the divine power to overcome the resistance of fools and beasts, it does not follow that the apparent is a true measure of the real resistance. For to impress on fools and beasts even a dim sense of the rationality of the scheme of things, is a task more difficult by far than to prevail over the dissent of superhuman *intelligences.* And besides, how do we know that this very contemptibleness in appearance of the obstacles to the world's progress (cp. §25 s.f.) is not in itself an effective method of the divine guidance of the process, that it does not form part of the humorous element in things, of that subtle "irony of fate" and that gentle cynicism of nature's ways, which we so often fancy we can trace in the course of the world? We

have hardly yet got the data for estimating the strength of the spiritual resistances to the divine purpose. It is only when we see how slowly the vast and incalculable power which is displayed in the order of the physical universe grinds small the obstacles to its purpose, how many millions of years were required to evolve man, how many thousands of years to civilize him, and how slow even now the stubborn obstinacy of unreason makes the ever-accelerating progress of the world—it is only when we observe and ponder on all this, that we may form some faint image of the strength of the spiritual resistances to the world-process, and obtain an idea of the grandeur of the Divine Purpose immensely more vivid and impressive than the vague hyperboles of an uncritical adulation of the Infinite. The conception of the Divine Power as finite exalts the Deity, actually and morally, as far above an unintelligible Infinite as modern astronomy has exalted our sense of the grandeur of the universe, as compared with the ancient fancies that the stars were set in the firmament to adorn our skies, or that the sun was "about the size of Peloponnese," and was put out every night in the "baths of Ocean."

And the moral stimulus and emotional relief also of such a conception of the world-process ought to be immense. It represents us no longer as the helpless playthings of an infinite and infamous Deity, the victims of a senseless tyranny of an Omnipotence we can neither resist nor assist, purposely condemned to some idle task-work or equally unmeaning idleness in a purposeless world, that could achieve nothing the Infinite might not have achieved without our sufferings and without our sorrows. We are now ourselves the subjects of the world's redemption; we can ourselves assist in our own salvation; we can ourselves co-operate with God in hastening the achievement of the world-process, co-operate in the sweet assurance that no effort will be rejected as too petty or too vain, that no struggle will lack divine support. It is beyond the scope of an essay like this to draw out in detail the practical consequences of theoretic principles, and to proceed to the exhortations of practical religion, but it is evident that it would be difficult indeed to imagine a creed more apt than this to fortify the best elements in the human soul, or to appeal more strongly to all the higher instincts of our nature.

§29. But perhaps it may be asked, if God is not identical with Nature, and if the interacting Many are the ultimate nature of things, why need we go beyond the phenomenal Many at all, and why complicate our scheme of things by a reference to a transcendent God and ultimate realities? Granted that the sum of things cannot fitly be called God, why do we require a God besides? Why should our Pluralism be theistic? Should we not do just as well by regarding the world as it appears as the world of ultimate reality, composed of interacting material beings, which can admit of no God that is not like it phenomenal?

The raising of this question is in reality merely one form of asking why we need to go behind the phenomenal. And the ultimate answer to it is that all science and all knowledge, every intelligible view of life, must go behind the phenomenal. Even the most materialistic and unspeculative science must do it to some extent, must form theories of the unseen and imperceptible, in order to account for appearances (cp. ch. iii. §3). And so the philosophic ground for the existence of a God is of a precisely similar character to the scientific ground for assuming the existence of atoms or undiscovered planets. It is an inference to account for the actions of the apparent: we infer the existence of the unseen reality God, just as the astronomer inferred the existence of the unknown planet Neptune from the motions of the known plan Uranus. We infer it because there is no other *reasonable* way of accounting for the motions of the world.

That this is the case will easily appear, if we consider what are the characteristics of the world which directly necessitate the inference to the existence of a God.

It is agreed, in the first place, that if the phenomenal world is ultimate, the individual existences in it are alone real, and that it is a superstition to hypostasize their interaction as "Nature" or "the All." Nature is not a reality superior to the individuals and capable of controlling their destinies, but simply the sum total of their interactions, and all the operations of nature must be explained by the capacities of the known individuals. Hence all the intelligence, reason, or purpose we discover in the world must be conscious intelligence, in some or other of its real existences. Even, therefore, if we could think such things as unconscious purpose or impersonal reason, even if all canons of valid thinking did not forbid us thus gratuitously to multiply entities, which no experience can suggest, there would be no room for them in our world. Whatever intelligence, therefore, is found to be active in the world must be due to the action of some real being.

But we do find in the world manifold traces of an intelligent purpose which is not that of any known intelligence. Intelligent observation of the course of events strongly suggests that there is "a Providence that shapes our ends, rough hew them how we will." And even strict science is forced to recognize this in the Evolution of the world. Here we have all things tending persistently and constantly in a single and definite direction. This tendency of things goes on while as yet no one had discovered it, it goes on although no one consciously aims at it, nay, in spite of the constant opposition of a large portion of the conscious intelligence of the world. But the idea that this constant tendency is due to any of the known intelligences of the world refutes itself as soon as it is stated; to suppose that atoms and amoebas could, at the time when they were the highest individuals in the world, direct its process towards the development of individuals in associ-

ation (ch. viii.) is absurd. We have, therefore, in the world-process the working of an intelligence which not only guides the actions of the unconscious material existences, but overrules those of the conscious intelligences. The only possible inference from the fact of the constant and definite tendency of the world-process is that it is purposed by the intelligence of a real being, of a God, who, though not seen, is yet known by His action on the phenomenal world. And when it becomes possible to formulate the tendency of the world's Evolution in terms which appeal to our own intelligence, this inference as to the existence of God becomes as certain as any of our inferences can be.

And a similar conclusion follows from the elimination of evil and the contemplation of the moral aspects of the world-process. If we admit—and unless we are pessimists we must admit—that Good is gradually prevailing over Evil, that the world-process tends towards harmony, we must admit also that this improvement is neither inherent in the constitution of things nor yet due to the efforts of the known existences. It is not inherent in the constitution of things, for the present condition of the world sufficiently shows that in itself that constitution is perfectly compatible with the existence of disorder, conflict, and Evil, that the existence of the world is just as possible with a discordant as with a harmonious interaction of its parts. The constitution of things is equally consistent with a good and with a bad world, and hence cannot be regarded as the cause of the world's improvements. Nor can we ascribe it to the efforts of the known existences, in face of their ignorance of the good, and their frequent and lamentable failures to discover the conduct which really benefits them. The progress, therefore, of the world directly points to God as its author.

Thus a personal and finite, but non-phenomenal, God is the only possible cause that can account for the existence and character of the world-process, and the belief in God's existence is intimately bound up with the belief in the reality of the world-process. Hence the method also of our proof of God's existence stands in the sharpest contrast with that of Pantheism. It is not based on a supposed necessity of hypostasizing the abstract formula of a logical unity of the universe, a unity indifferent to every content and intrinsically empty. It does not yield a God who is equally implied in every sort of world, without reference to its nature and its character, a God indifferent to the course of things, and without influence upon it, a God unknowable and unprovable. On the contrary, it proves His existence in the only way in which it has been evident, since Kant, that it could be proved (ch. ii. §19), viz., not a priori, from the consideration of a world as such, or of an abstract totality of reality, but *a posteriori* from the particular nature of this particular world of ours. And being an inference from real data it will permit the proof of something beyond

mere existence (cp. ch. ii. §3). The character and nature of God and of His purpose may be obscured in the gloom of our ignorance and degradation, but they are not intrinsically unknowable. And the divine education of the human race lies just in this, that in studying the nature and history of our world, we are spelling out the elements of God's revelation to men.

§30. It will be necessary to touch upon one more objection to the principles laid down in the preceding sections, not because it is very important in itself, but because it contains a certain amount of truth. The question may be asked, how does this view assure us that God is one and not many? In answer it would certainly have to be admitted that the unity of the divine person was not a matter of philosophic principle. If there are other reasons for holding that God is three, our theory offers no obstacle. For we cannot infer from the unity of the world's plan and working anything more than *unaninity* or harmonious co-operation in its cause. But if the world-process displays, as it surely does, perfect unity alike in its conception and its execution, there can certainly be no philosophic reason either for assuming a plurality of guiding intelligences. Still less would our experience of combined action in our world warrant such a hasty belief in its efficiency as would justify us in substituting a heavenly democracy for the monarchical rule of a single God. And so it will doubtless appear preferable to most minds to retain the unity of the God-head, to which their feelings have grown accustomed, in a case where the assumption of plurality could not possibly serve any practical purpose. What is alone important is that the conception of the Deity sketched in this chapter should not be thought to afford any support to polytheism, with its discordant interferences and jealous animosities of conflicting deities; beyond that it is needless to dogmatize prematurely upon a subject which possesses neither theoretic nor practical importance.

NOTES

1. It is sufficient to show this in one case, for *exemplo ab uno disce omnes*, and we shall choose for that purpose one who is as certainly the frankest and clearest as he is the ablest of modern metaphysicians. E. von Hartmann is strongly and sincerely convinced that the world is a process, and that, too, a process of redemption. A redemption of what? Of the Absolute! For the Absolute is now no longer absolute, but a mere *ci-devant* Absolute, and requires to be redeemed from the deplorable consequences of a youthful *faux-pas*. It created the world, or entered upon the world-process, in a fit of temporary insanity. Or, as van Hartmann puts it more politely, when the absolute Unconscious is quiescent, its Reason is non-existent, and its Will is potential. Only, unfortunately, the Will is not in this condition guided by Reason, and so the Unconscious commits an irrational *act* of willing, and

becomes actual. But by the nature of things (superior to the Absolute-Unconscious?), to will is to be miserable, and the Unconscious is supremely miserable. So it stirs up its Reason, and the Reason devises the world-process as a sort of homoeopathic cure of the misery of the Absolute, the end of which is to bring the Unconscious back into the quiescence from which it so rashly and irrationally departed. It is interesting to note in this, (1) the frank admission that the ultimate cause of the world's existence is the irrational, in this case an irrational act of Will; (2) that even when this has been assumed, it must be supposed also that for practical purposes of explaining the world, the Infinite has *ceased* to be infinite. Not even when we have been told that the ultimate reason of things is something for which no reason can be given, can anything be made of the world except on the supposition that somehow this irrational Absolute has ceased to be infinite.

2. Cp. ch. vii. §24. It may, perhaps, be objected to this illustration that to assume a content A is to assume the finiteness of that content. And this is true, but the assumption is really first made when the world is supposed to have a meaning, i.e., a content expressible in terms of the All. For (owing to the finiteness of our minds?) all the conceptions of our thought imply finitude, and an infinite meaning is a meaning which means both this and that, i.e., is indeterminate, and so means nothing at all. If, therefore, we are to reason about the Infinite at all, we can only do so in terms constantly implying finiteness, a fact which is significant enough to those who deny the reality of the Infinite, though it may well drive its champions to despair.

3. The hectocotylus. It matters not that this independence of the parts endures only for a limited period, for the wholes also which dispense with their parts are equally impermanent.

4. "And the plan of Zeus was working out its fulfilment."—Iliad i. 5.

17

DARWINISM AND DESIGN

The question which is proposed for consideration in the present essay concerns the value of what has been called the Argument from Design, in the light, not so much of the very various and widely spread modes of thought grouped together under the name of Evolutionism, but rather of the particular form of Evolutionism which has been popularised by the labours of Charles Darwin, and not undeservedly bears his name.[1] In face of the Darwinian theory, and the account it gives of the pedigree of life, are we any longer entitled to entertain the notion that a more than human intelligence has anywhere or in any way contributed to the making of what now exists? Is there any evidence to be found in the constitution or working of any part of nature which directly testifies to a divine creator? These are old questions which, in some form or other, men have probably asked ever since they were men, and will probably continue to ask until they have become beasts or angels. Their practical importance will readily be admitted. For clearly our attitude towards life will be very different, according as we believe it to be inspired and guided by intelligence, or hold it to be the fortuitous product of blind mechanisms, whose working our helpless human intelligence can observe but in no wise control.

Humanism: Philosophical Essays (London and New York: Macmillan, 1903), pp. 128–156.

Although the Argument from Design has been taken as a rough description of the subject to be treated, it will yet be convenient, at the outset, both to restrict and to expand its scope. It will be restricted in that the discussion will turn exclusively on the argument as based on *living* nature; it will be expanded, in that that subject will include the question of the action of intelligence generally in producing the present condition of things. That is to say, the possibility that though no traces of a divine intelligence are to be found in the history of the organic world, there has yet to be admitted the action of human and animal intelligence, will not be overlooked. For the world may have been brought into its present shape by *intelligent efforts*, if not by *intelligent direction*. We are not bound to assert a divine activity as soon as we have asserted the activity of intelligence. So it has to be confessed that before the Argument from Design has any theological value, three things have to be shown—(1) that intelligence, i.e. action directed to a purpose, has been at work; (2) that the intelligence has *not* been that of any of the admitted existences; and (3) that from its mode of action this intelligence may fairly be deemed divine.

But if it is necessary to draw attention to a leap which the theologian's logic is too apt to commit, it is no less important to point out that the denial of the Argument from Design logically leads much further than its opponents commonly dare to go. For it would seem that a complete denial of design in nature must deny the efficacy of all intelligence as such. A consistently mechanical view has to regard all intelligence as otiose, as an 'epiphenomenal by-product', or fifth wheel to the cart, in absence of which the given results would no less have occurred. And so, if this view were the truth, we should have to renounce all effort to direct our fated and ill-fated course adown the stream of time. Our consciousness would be an unmeaning accident. On the other hand, if intelligence played the part in history alleged by the second theory of its action, we might still cherish a hope of steering the bark that carries our fortunes at least into a temporary harbour; if that of the first theory, we might be moved to strain every muscle at the behest of a helmsman who could envisage the goal with unerring eye.

We have, then, three alternatives, of which the old 'Argument from Design' undertook to represent one. It was a simple-minded argument, as befitted a time when the eventful history through which life has passed, and the real intricacy of its phenomena, were as yet scarcely suspected. It contented itself with observing the variety and ingenuity of the means whereby living beings attained their ends. The structure of the eye and the ear, the prescience of instinct, the processes of growth and birth, etc., provided it with inexhaustible material for respectful admiration. Surely all this could not be the result of blind chance, of unintelligent matter—it proceeded from the hand of God.

In more modern language, the Argument from Design essentially argued from the existence of adaptation to the existence of an adapter. Beings would not have been so admirably fitted for their conditions of life unless they had been intelligently 'fitted' for them. And the adaptations were so wonderful that the adapter must have been divine.

Now, it is easy to see that in this shape the Argument from Design has several weak points quite apart from the attacks which Darwinism has made on it. (1) The thought of evolution, of a cosmic process, revealing itself in the course of time, the thought that lends grandeur and strength to the modern versions of the ancient plea, was entirely foreign to it. Consequently it took the process of adapting, whereby the adaptation arose to be instantaneous and complete. Consequently it was sadly perplexed by the fact that many adaptations were far from perfect. When Helmholtz pointed out the optical defects of the eye, and the ease with which they might have been remedied, the defenders of the old teleology were at a loss to answer a sacrilegious but exceedingly awkward criticism. They could not admit what now the teleological evolutionist may say without wincing—viz. that the adaptations in themselves, and as they now exist, form a somewhat imperfect and insufficient testimony to divine agency, and no testimony at all for a divine omnipotence. And, (2) it was not shown that animal intelligence might not have constructed the adaptations actually found. That suggestion could be ruled out only so long as the belief in the fixity of species prevailed; but it became far more tenable so soon as practically unlimited time was allowed to intelligent effort to reach the degree of adaptation exhibited. And so there was nothing for it but to ascribe to the direct contrivance of the Deity every adaptation and every instinct found in the organic world, to burden, for example, the divine conscience with the fiendish ingenuity with which a sphex-wasp stings into helplessness the caterpillars it has selected to be the living food of its young. The defence of the divine intelligence, in short, was maintained at a ruinous expense to the divine benevolence.

Thus the old Argument from Design was in a bad way even before Darwinism appeared upon the scene with pretensions to deliver the *coup de grâce*. Darwin himself, it is true, did not assert that no adapter existed. But he did what was more effective; he suggested an alternative way in which adaptation might have arisen. This was not immediately fatal to the theory of intelligent effort as such; for in human beings, at least, that theory was generally admitted as a *vera causa*, and so could be co-ordinated with the Darwinian explanation. But it did leave the theory of an inferred divine adapter in the logically indefensible position of being an additional and superfluous explanation of facts already sufficiently explained in other ways.

Darwin's alternative consisted in showing that the existence of adaptations is conceivable and possible, although there has been neither an

adapter nor any process of active adapting, but merely a sifting or eliminating of the 'unfitter'. To show this, he required only two of the postulates of his theory—(*a*) the existence of variability in living organisms; and (*b*) the struggle for existence among them leading to the survival of the fitter, or comparatively fit, and the elimination of the unfitter, or comparatively unfit. The variability of organisms was further conceived as of such a character as to lead to what were called 'accidental' variations in every direction. This was to indicate that no special tendency to vary in any direction more than in any other was to be assumed, and that the causes of variation, which Darwin forbore to investigate, did not favour one sort of variation rather than another. Darwin, therefore, supposed nature to start with an indefinitely large supply of variations, some adaptive, the immensely greater number not. These were sifted by the process of Natural Selection, which eliminated the non-adapted and ill-adapted, so that only the fit survived, and after a time organisms would be, in a general way, adapted to their conditions of life. The process by which these adaptations arose, therefore, was a purely mechanical one, and did not imply any intelligence. The sifting of variations by natural selection would no more imply a purposive ordering than the successive depositing of lighter and lighter detritus as a river flows out into the sea.

The anti-teleologically minded, to whom the support which biological facts had seemed to give to the belief in design had long been hateful, were naturally delighted with this easy and obvious way of disposing of the appearance of intelligent adaptation. They loudly proclaimed the disappearance of the Argument from Design, and even their critics only ventured to object that Darwinism had substituted one kind of teleology for another, and made the good (or survival) of the organism determine the conduct adopted by the race. That was a poor consolation, and, in my opinion, an illusory one. For it is not *for the sake* of the organism's good that the conduct is adopted, but it so happens that conduct can only become prevalent when it has survival-value, and that the prevalent conduct and that adapted to the conditions of life must coincide. In reality the process is not teleological, but purely mechanical. This appears quite clearly if it is supposed to act upon beings conceived to be devoid of all intelligence, and it turns out that it acts equally well. If animals were mere automata, their variations would be sifted by natural selection in just the same way, and it is quite possible and legitimate to apply Darwinian methods of argument to astronomical physics and the chemistry of the elements.

But if the Darwinian assumptions are equally applicable to automata, they are, ultimately and in principle, just as fatal to the view that animal intelligence plays any part at all in the history of life as they are to the belief in its divine direction, and this logical implication is already appearing in

the ultra-Darwinian writings. It is quite consistent of them to speak of the 'omnipotence' of natural selection and to reject or minimise all other possible factors, like intelligent effort, use and disuse, physical and chemical conditions, etc., as directive forces in Organic Evolution.

If, then, Variation and Natural Selection are the alpha and omega of the matter, and adequate to account for all the facts, it would seem to be beyond doubt that there is no longer any place for any sort of teleological argument. Nevertheless, it may reasonably be contended that this inference would be entirely erroneous, for the reasons to be presently set forth.

I. The *ease* with which the Darwinian argument dispenses with all intelligence as a factor in survival excites suspicion. It is proving too much to show that adaptation might equally well—i.e. *as completely, if not as rapidly*—have arisen in automata. For we are strongly persuaded that we ourselves are not automata, and strive hard to adapt ourselves. In us at least, therefore, intelligent effort *is* a source of adaptation. And the same will surely be admitted in the case of the higher animals. How far down the possibility of such intelligent co-operation in a greater or less degree is admissible, depends very much on people's preconceived notions; but we are, at all events, unable to fix any definite inferior limit beyond which influence of intelligence cannot penetrate. Intelligence, therefore, is a *vera causa* as a source of adaptations at least co-ordinate with Natural Selection, and this can be denied only if it is declared inefficacious *everywhere*, if all living beings, ourselves included, are declared to be automata.

But should this be attempted—and it would seem to be involved, e.g. in the assumption of 'psychophysical parallelism'—a peculiar difficulty arises on the basis of the Darwinian theory itself. If intelligence has no efficacy in promoting adaptation—i.e. if it has no survival value, how comes it to be developed at all? On the Darwinian assumptions only those qualities can be developed which have a value for survival. This must be true also of intelligence, which, consequently, cannot be mere surplusage.

It must therefore be admitted that Darwinism is demonstrably wrong and refutes itself, if it seeks to deny the possibility of purposive adaptation and to regard *all* adaptation as the result of a mechanical natural selection. If, however, intelligence is re-admitted as a *vera causa*, there arises at least a possibility that other intelligence besides that of the known living beings may have been operative in the world's history.

II. We may scrutinise the initial assumptions of Darwinism from which the anti-teleological consequences flowed. We may ask whether variation is really as 'indefinite' and 'accidental' as represented Is it really so impossible to say anything about its causes?

We are here entering on a battlefield of science where the reputations of experts are still being made and unmade. Hence it behoves a philoso-

pher to be careful. Nevertheless one may venture to make some remarks on the general aspects of the question, and to assert that the matter cannot possibly be left where Darwinism would leave it. Thus (1) Darwinism puts aside the question of the origin of variations. They are 'accidental', that is, beyond the pale of inquiry. Yet it seems to be a perfectly good and legitimate scientific question to ask—whence these variations? What, in Professor E. D. Cope's parlance, was the *origin* of the fittest? how, in Dr. J. G. Schurman's words, do you account for the arrival as well as for the *survival* of the fittest.[2]

(2) Darwinism assumes the occurrence of indefinite variation in every direction. That assumption is, as we shall see, essential and quite justifiable as a methodological device in examining the facts and in working out the theory of Natural Selection; but we have a perfect right to ask whether it is actually itself a fact. That is, the study of the variations which actually occur is a perfectly legitimate one, and as initiated—e.g., in Bateson's recent work on the subject[3] very distinctly suggests that variation is frequently discontinuous, and that it is to these discontinuous 'sports' rather than to the accumulation of slight differences that we have to look for the origin of many new species.

In both these respects, then, the non-Darwinian evolutionists seek to penetrate deeper into the nature of Organic Evolution than Darwin needed to do when he established the reality and importance of Natural Selection, and when Darwin's followers speak of the 'omnipotence of Natural Selection', they fail to observe that their opponents have really turned their flank. For while they do not deny the reality of Natural Selection, they go on to solve problems which, on the basis of Darwinism, cannot be discussed. Hence the Darwinians have not really any logical *locus standi*—e.g., in many of their objections to the 'Lamarckian' factors in evolution. Biologists must be left a free hand in their attempts to determine the nature and source of the variations actually occurring, and in their theories to account for them. If, after admitting the existence of natural selection, they go on to say that variations are not indefinite and their causes not in determinable, Darwinian orthodoxy has no right to interfere. Or if it mistakenly does try to interfere, its defeat is certain. For it is practically certain that some influences which can only be called 'Lamarckian' must affect both the number and the character of the variations. Living organisms are subject to the general physical and chemical laws of nature, and these render variations in certain directions practically impossible. It is very probable also that they produce certain definite effects upon the organisms exposed to them, and thus give a definite direction to variation. Thus the force of gravity imposes limits on the size to which organisms can grow upon the earth; high and low temperatures produce definite effects upon all living tissue. Starvation

also will stunt the growth of all organisms. The efficacy, then, of these additional factors in determining both what sort of variations can occur, and in what directions organisms can vary, can hardly be disputed. Yet this admission would seem to be a sufficient refutation of the extreme claim that Natural Selection alone is competent to account for everything and exhausts the list of the factors in organic evolution which are logically admissible.

It follows that if the Darwinian factors are not an adequate and complete account of what really happens, we are at liberty to supplement them by any additional factors we may require. Some such factors, such as geographical isolation, are, of course, admitted even by the ultra-Darwinians; others, like sexual selection and the inherited effects of use and disuse, were adopted by Darwin himself; others, again, like the sensibility of organisms and their conscious efforts to attain their ends, are at least tolerated as worth discussing. What part, if any, these factors actually play in the history of organisms is still *sub judice* and cannot here be determined. It is enough for the present argument that Darwinism is not entitled to bar them out a priori as methodologically inadmissible. For if they are not inadmissible, a breach is made in the iron barrier with which the original conception of a mechanically complete Darwinism shut out every possibility of teleology. It is so far attenuated that it can no longer reject a priori the suggestion of the possibility of one more teleological factor, viz. of a purposive direction of the course of variation. Such a purposive direction would still be hard to prove, because its action would be cloaked under a mass of other causes of variation, and because it would perhaps only display itself clearly in the occurrence of variations leading on to new species or new eras; but it would no longer be unthinkable, and that would be no slight step towards a teleology.

III. It has been shown so far that if Darwinism is, as may easily be done, made into a dogmatic denial of the share of intelligence in Organic Evolution and of the admissibility of determinable causes, of a limited number, and of a definite direction of variations, it is demonstrably wrong; we shall go on to assert that in any form it leaves unexplained the main point, the very point it was invented to explain, viz. Organic Evolution itself. That may seem a startling statement when one remembers that what led Darwin to propound his theory was precisely the evidence for Organic Evolution, the evidence of the descent of the existing forms of life from widely different ancestors. Yet the statement is made under a due sense of responsibility and with a full intention of proving it.

Darwin put forward his theory as an account of the origin of species—it is asserted that there is nothing in that theory in itself to account for the origination of species. At least, in the sense that Darwinism formulates causes which would logically lead to the evolution of new forms of life. The Darwinian factors only state certain conditions under which organisms

have evolved, but they contain nothing that would necessarily cause them to evolve. They simply state that Natural Selection is a general condition under which all life exists, *whether it evolves or not*. It is equally applicable to species which change and species which do not. Every form of life is continually subject to the action of Natural Selection, weeding out the notfit and promoting the survival of the fit. But it does not follow that any particular form of life will be transformed. The conditions of success may be so various and so variable that on the whole no possible variation can obtain the victory over any other, and as a whole the species remains as it was. Let us illustrate the way in which a species under natural selection may yet persist unchanged. Suppose there is in a definite area an animal, say an anemone, which has a certain range of temperature and is variable, so that while the mass of the species is violet, it tends to vary in the direction both of blue and of red. Suppose, further, that the blue variety can stand the cold best and the red the heat, while the violet is intermediate in these respects. Now suppose a succession of unusually cold seasons. Clearly the blue anemones will flourish at the expense of the violet, and the red will nearly die out. Next suppose a succession of warm seasons; clearly the red will recover their strength and the preponderance of the blue will be reduced. At the end of the cycle, red, blue, and violet will very likely exist in their original proportions. That is, though the Darwinian factors, variability and natural selection, have been fully and continually operative, the species has not changed. Such a case, though I have intentionally chosen an imaginary one, is not merely hypothetical; it is illustrated by a small but sufficient number of persistent species which have remained unchanged from very early geological times. Darwin himself[4] mentions the Nautilus, the Lingula, and the order of the Foraminifera, antique stick-in-the-muds literally and metaphorically, which are the Chinese of the animal world and have persisted without change from the Laurentian and Silurian ages. And over shorter periods a similar persistence under Natural Selection is the normal condition of the organic world. Indeed, specific stability is a much commoner result of Natural Selection than Evolution.

And further, not only are the Darwinian factors perfectly compatible with a changeless persistence of species, but they are equally well satisfied by change in a direction which is the reverse of that which is actually found to prevail. For not merely progressive evolution but also *degeneration* may come about under the impartial operation of variability and Natural Selection. Under certain circumstances the more lowly organised may be the fitter—i.e. the better adapted to cope with the conditions of life that prevail at the time; and then the higher must either die out or degenerate. Hence biologists are familiar with countless instances of degeneration everywhere. We ourselves are degenerate in far more obvious and undeniable ways than

sensationalists like Nordau contend. We have lost our fur—all except a few patches on the head—our ancestral tails, our pineal eye, our sturdy claws and prehensile toes, the tapering tips of our ears and the graceful power of attentively pricking them up; the vermiform appendix indeed remains as a joy to the evolutionist and a profit to the doctor, but to the patient the useless and dangerous relic of a *damnosa hereditas*. And all this degeneration has taken place under the action of Natural Selection.

Not but what there has also been much progression, and that in the aggregate its amount has far exceeded that of degeneration. That is just the reason why we speak of the history of life as an evolution. Life has been on the whole progressive; but progress and retrogression have both been effected under the same 'law' of Natural Selection. How, then, can the credit of that result be ascribed to Natural Selection? Natural Selection is equally ready to bring about degeneration or to leave things unchanged. How, then, can it be that which determines which of the three possible (and actual) cases shall be realised? Let us grant that Natural Selection is a permanent condition of life, from which no beings can at any time escape. But for that very reason it cannot be the principle of differentiation which decides which of the alternative courses the evolution of life will in fact pursue. It cannot be Natural Selection that causes one species to remain stationary, another to degenerate, a third to develop into a higher form. The constant pressure which it exercises on organisms does not in the least explain the actual course of evolution any more than the constant pressure of the atmosphere determines the direction in which we walk. The cause of the particular changes which have led to the existing forms of life cannot be found in an unchanging law of all life; it must be sought in forces whose intermittent action has made an instrument of Natural Selection.

It is clear, then, that to explain the changes which have resulted in the existing forms of life *some variable factor has to be added to Natural Selection*. And as to the nature of that factor Darwinism, qua Darwinism, tells us nothing. There may have been one or more of them, they may have been of all sorts. They may have been nothing more recondite than climatic changes or geo graphical isolation, to mention two of Darwin's favourite explanations when Natural Selection stands in need of something to help it out in order that it may proceed to the origination of species. Now clearly these causes of the transmutation of species, and others that might be instanced, are under the proper conditions adequate to produce *new* species—though there is no apparent reason why they should so predominantly produce *higher* species—but that does not concern us here. The point to be emphasised is that these additional factors lie beyond the scope of the peculiarly Darwinian factors, which can have nothing to say on the question whether they are to be accepted or rejected. As long as the action

of Natural Selection as a permanent and universal condition of life is conceded, there is nothing further to be said by the Darwinian theory. If, then, there is no other scientific objection to it, the notion of a purposive direction of variation becomes admissible. Nay, it would be possible to combine a belief in special creation with that in Natural Selection, and claim that while Natural Selection alone could not give rise to a new species, Natural Selection *plus* special creation might account for the distribution and succession of species. We should thus reach the paradoxical result, that whereas Natural Selection was expressly invented to supersede special creation, there is no necessity to regard the two theories as incompatible! I mention this paradox merely to illustrate by it the helplessness of mere Natural Selection and the necessity of appealing to subsidiary theories in order to account for the facts of Organic Evolution.

Of course, there is an abundance of such subsidiary theories, and many of them are quite unteleological. One may, for instance, continue to object to teleology on a variety of general grounds. Only those objections will not be specially grounded in Darwinism, and so far as the latter goes, it will not be possible to rule out the supposition that the process of Evolution may be guided by an intelligent design.

IV. A further logical limitation of Darwinism is of a still more fundamental character. We have seen that Darwinism can supply no theory of the origin of Variation. Nor does it necessarily lead to the transmutation of species. Nor does it as such involve a growth of adaptation or yield an adequate account of Progress. But more than all this, it does not even give an account of the *origin of adaptation*. A little reflection will show that a certain amount of adaptation must always be conceived to pre-exist before Natural Selection can begin to operate, the amount, namely, which is requisite to enable the organisms to exist, out of which the 'fit' are subsequently to be selected. There must be an existence of the *fit* before there can be a survival of the *fitter*, and beings must be capable of existing at all before the question of their living better and surviving can be raised. Hence the initial degree of adaptation needed for the existence of organisms in the world together must always be *presupposed* by the Darwinian theory. It must renounce therefore its claim to have accounted for adaptation as such, and so to have wholly superseded the teleological argument.

Indeed, it may be questioned whether it *ever* involves any growth of adaptation, or does more than describe the means by which an already existing adaptation is preserved through changes in the conditions of existence. It is clear that a thing must be before it can be selected. And to be, it must always be adapted to the conditions of existence. It cannot be said to grow *better adapted* unless it actually manages to exist more copiously, or fully, or easily. But can this be said to be true of the ordinary Darwinian ver-

sion of the history of organisms? Is it true that they have grown better adapted, and are better able to survive? Is not the struggle for existence, now as ever, a struggle for a bare livelihood? It boots not to suggest that many or most of the beings who now just manage to exist would have lived in comfort in a former age; for apart from the dubious truth of the assertion, it is clear the fitness of each being must be measured by its ability to exist under the conditions of its own time and place.

What seems to happen is rather this: we *start* with adaptation, with a sufficient equilibrium between the organism and its conditions of life to allow of its existence (for a season). But this equilibrium is constantly endangered by the changes in its conditions of life; hence there is constant need for an adaptive response to these changes, for novelty of adaptation. This response some somehow manage to effect, and so survive; the rest do not, and therefore perish. And it is this process which we dignify with the name of Natural Selection. But it is the name only for the mechanism which just keeps alive the sacred fire of life; it neither lights it nor improves its' radiance. Nor do we come upon any incontestable traces of improvement until we come upon the traces of intelligence. It is only with beings that aim at ends, conceive *goods* and frame ideals of better living, that there begins that funding of the power over life which renders possible the pursuit, not of mere life, but of *good life*, and transfigures the struggle for existence by an ethical ideal. Natural Selection is a universal condition of life, but it is not for us a model or a guide. It is non-moral and relieves us of no moral responsibility; it remains within our power to mould it well or ill.

V. It will, perhaps, be objected that in the anxiety to invalidate the anti-teleological implications of Darwinism we have gone too far, and denied its whole scientific importance. For what is the value of Natural Selection if it does not explain Evolution? Such a result is too monstrously paradoxical to be accepted as the outcome of any argument, however solid it may seem.

This objection should be welcomed by anticipation, because it leads on to a discussion of the real scientific value of the Darwinian theory, and in so doing traces to its real source the prima facie conflict between Darwinism and teleology. In reality there is not involved in anything that has been said any disparagement of Darwin's tireless scientific labour, nor does anything that has been said in the slightest detract from the permanent value and immense importance of his work. What is disputed is not the valuable part of his work, nor the true meaning of his theory, and these remain intact when a misinterpretation of his theory and a misapplication of his results are controverted.

What, then, is the true significance of Darwin's work? It is *to have established once and for all the reality, universality, and importance of Natural Selection as a condition of organic life*. That has been its main achievement rather

than the refutation of crude theories of creation and teleology, or even the assignment of an all-sufficient cause for the changes of organic forms. It is somewhat difficult to establish this view by direct citation from the utterances either of Darwin or of the other leading Darwinians, for the reason that Darwin stumbled upon Natural Selection in the endeavour to prove Evolution, and never was greatly interested in, or even competent to discuss, the logic of his theory. Hence its fundamental conceptions are introduced quite innocently and without formal definition, as if their meaning could not possibly be mistaken; hence, also, terms like 'indefinite', 'endless', 'fortuitous', sometimes only mean, respectively, 'not obviously limited', 'in sufficient quantities', and 'unexplored'; sometimes, as will be shown presently, they seem, quite unconsciously, to mean much more.[5] This state of things, is, however, explained when we remember that there is abundant autobiographical evidence that Darwin himself elaborated his theory in support of evolutionism against creationism, and by concrete examples rather than by abstract deductions; for by such methods he would naturally not become fully conscious of its logical implications. Hence the extraction of the logical root of the Darwinian theory becomes a matter of philosophical interpretation which may be represented somewhat as follows.

Suspecting Natural Selection to play a part in the Evolution of life, Darwin had to determine what part of the total effect was due to the factor which he called Natural Selection. To solve that problem he adopted, no doubt instinctively, the method by which all scientific investigation proceeds in dealing with a complicated problem. That method is that of *abstraction*, of abstraction as a means of simplification. We isolate the factor of which we seek to determine the value by taking cases in which the other factors may be supposed to neutralise each other, and so to be irrelevant to the result. Our result is abstract, but, if the analysis has been carefully done, it is applicable to the concrete facts.

That is precisely what Darwin did. The phenomena of life are immensely complicated, and there was ample reason to suppose that they were affected by all sorts of influences. To lay bare the effect of Natural Selection, it was necessary to simplify them by constructing an ideal case from which other influences might be excluded.

That is the logical significance of the fundamental assumptions of Darwinism. Darwin knew that organisms varied. He did not know how much, or in what direction. But if there was a definite direction about the variation of organisms, this clearly might in various ways retard or accelerate the action of Natural Selection, and would in any event cloak it. It is obvious, for example, that if a race of elephants tend to vary in the direction of whiteness, then, though that variety may be weaker and less well equipped

for the struggles of life, there will always be a certain supply of not-yet-eliminated white elephants.[6] Again the fate of the variety will be widely different, according as men consider them unlucky and kill them, or sacred and watch over them with especial care.

In order, therefore, to avoid the initial complications introduced by a possible tendency of variation in a definite direction, it was logically necessary for Darwin to assume that as a whole Variation had no definite direction. Variations occurred of all sorts, advantageous, disadvantageous, and indifferent, hence, as a whole, Variation was indefinite. Darwin, that is, did not facilitate his task by supposing a mass of favourable variations to give Natural Selection a good start; favourable variations were no commoner than they would have been if they had been drawn at random from an indefinite supply of possible variations of all sorts.

Similarly, in order to avoid the complicating question whether these variations were not produced by definite causes, and so tended in a definite direction, Darwin said in effect—Let us suppose these indefinite variations to be accidental. That is, let us waive the question of where they came from. And in this way he arrived at the assumption of indefinite accidental variation on which his theory proceeded.

It is clear, then, that this essential assumption of Darwinism was originally *methodological*, that it was a simplification of the facts assumed for purposes of analysis and easier calculation. This is, of course, an everyday procedure in all the sciences, and if a methodological assumption has been skilfully selected, it does excellent service. Now Darwin's assumption was an exceedingly skilful one: for whether or not it was true that Variation was absolutely indefinite and void of direction, it yet ordinarily seemed sufficiently indefinite to enable the ideal theoretical case to throw a most instructive light upon the actual facts.

Perhaps the character of the assumption of indefinite variation is best illustrated by a parallel methodological fiction which has also played a great part in history. I refer to the assumption of 'the economic man' in political economy. In order to build up the science of wealth, the early economists disentangled the primary laws of wealth-production by the methodological assumption of the 'economic man'. They said: Let us consider man as a wealth-producing animal; let us suppose, therefore, that the production of wealth is his sole object in life. In that case the economic man must be taken as (1) absolutely laborious, as never distracted from his work by emotional indisposition or laziness, as a perfect wealth-producing machine; (2) he must be taken as absolutely intelligent, as always using the best means to his end, as knowing how to use his labour to best advantage, and how to sell its products in the most advantageous manner; (3) he must be taken as absolutely selfish, as absolutely disregardful of any considera-

tion but that of how he could acquire the largest possible amount of wealth. Having thus *simplified* economic facts, let us see what will happen. And they proceeded to build up the science of abstract economics. When it was objected to them that their methodological assumption, the economic man, did not exist in reality, the wiser among them replied: 'Of course we know that, but the conditions of actual business are sufficiently close to what they would be under our ideal conditions to have much light thrown on them by the latter'. And they gave thereby a clue through the labyrinth of facts to the economists who succeeded them, and were able by means of it to calculate the effects in various departments of the inaccuracy of the methodological assumption of the 'economic man'.

Now 'the economic man' is an exact parallel to the 'accidental' and 'indefinite' variation of Darwin. They are both methodological assumptions, travesties of the truth, if taken as full and complete accounts of the actual facts, epoch-making and indispensable *organa* of science, if properly used. And the parallel extends still further. As philosophers are well aware, there is everywhere in the sciences a tendency to forget that methodological assumptions are not necessarily true because they are useful,[7] a tendency to assert as a fact what was at first assumed as an abstraction and a fiction for greater convenience in examining the facts. Alike in ordinary life and in science we are almost without exception given over, not to the adoration of an unknown god, but to the worship of forgotten abstractions and methodological fictions, and happy is he who can avoid bending the knee to such bogeys.

And this idolatry leads to terrible confusions, as these very cases show. When 'the economic man' is taken seriously, and made a practical ideal, he leads to results which are incompatible with the maintenance of political and social cohesion, and with the sanctity of moral laws. And he provokes a reaction even worse than himself in the direction of revolutionary socialism.

So, too, with the Darwinian assumption. When it is taken as a fact and as the last word on the subject of evolution, it leaves no room for the Argument from Design, and leads to consequences entirely inconsistent with any teleology. Moreover, the misrepresentation of the principle of indefinite variation is a very easy and common one, and has been adopted in this very article in exhibiting the conflict between Darwinism and teleology. But, once it is recognised as a misinterpretation, as a case of confusing a method of examining facts with the facts themselves, the danger of any further conflict is averted.

It remains to give practical confirmation of this interpretation of the real meaning of the Darwinian principle. To do so, it may be pointed out, in the first place, that Darwin assumed the indefiniteness of Variation ini-

tially upon utterly insufficient evidence, or, rather, upon no relevant evidence at all. For he was not in the position to make any positive statements about the variations that actually occurred, and had not had the time to study them exhaustively. In fact, it is only in these days that the actual facts of Variation are beginning to be observed and recorded, and many generations of workers will probably pass away before it will be possible to state with approximate certainty what variations actually take place, and can be conceived as likely to take place. If, then, Darwin's knowledge of Variation were to be regarded as the logical basis for asserting Variation to be in fact indefinite, the foundations of Darwinism would have been extremely insecure, and Darwin ought to have begun with an exhaustive study of variations before broaching his theory. Did he, as was to be expected from so exceptionally cautious an inquirer, subject himself to this preliminary investigation? He did nothing of the sort. He simply pointed to the known variety of variations as approximately illustrative of his conception of 'indefinite variation', and went ahead. I can find nothing more formal than a request[8] that 'the endless number of slight variations and individual differences occurring in our domestic productions, and in a lesser degree in those under nature, be borne in mind'. In other words, he did not attempt to prove the existence of indefinite variation in its literal sense; he took it for granted for the methodological reasons aforesaid. Was it wrong to do this? Not unless science is deprived of the right of making methodological assumptions. And the practical justification of Darwin's procedure is seen in the fact that his theory has in the ripeness of time provided a guiding thread and an impetus to the study of facts that might otherwise long have eluded the grasp of science.

VI. That the facts of Organic Evolution really play a very small part in producing the speculative bearing of Darwinism will appear also if we inquire into the reason of its anti-teleological action as commonly understood.

For it turns out that the destructive action of Darwinism is a by-product of the theory which lurked in the innocent-looking phrase, 'indefinite variation'.

We have seen that, as a method of investigating the facts, that phrase is thoroughly defensible; but then in that shape it does not really touch the question of teleology at all. For if the variations are only called indefinite in order to determine the working of Natural Selection, then the possibility of their purposive occurrence is not thereby excluded.

On the other hand, let us take the phrase as a description of an actual fact. If there are an indefinite number of variations, and if they tend in an indefinite number of directions, it follows that the variations in any *one* direction will not be more than an infinitesimal portion of the whole. It is

not necessary, therefore, to adduce any special cause for those particular variations; they need not be regarded as due to anything more than chance, that is, to causes which do not in any intelligent way discriminate in their favour. That advantageous variations should occasionally occur is no more remark able, or in need of explanation, than that by throwing dice long enough we should occasionally throw sixes. If, then, indefinite variation be an actual fact, no special intelligence need be assumed to account even for the most abnormal variation. In other words, *a principle has been adopted which rules out the hypothesis of intelligent direction* a priori, if we forget or fail to perceive that indefinite variation is a methodological assumption. And being a priori, the principle would rule out the hypothesis whatsoever the facts were, and however much they might suggest the action of intelligence. Intelligence is non-suited by the way in which the question is put, and irrespective of the facts of the case.

Yet all this is due to nothing more mysterious than an application of the calculus of probabilities, for, as all who are even slightly familiar with that calculus are aware, even the most improbable result may be expected to occur if a sufficiency of cases be given. It is highly improbable, for example, that any one should, by fair dealing, acquire a hand containing thirteen trumps at whist. But if he had played some 640,000,000,000 hands, he might fairly expect to hold all the trumps on one occasion. Everything that happens *may* be due to chance, and no matter how improbabilities are multiplied, we never altogether eliminate the infinitesimal probability that everything *is* due to chance. Supposing we were to try to persuade an obstinate materialist that our conduct was dictated by a purpose and due to intelligence, and was not the action of an automatic mechanism which had by some strange chance put on a delusive appearance of purposiveness. However intelligently we acted, we could not convince our adversary, if he were permitted to regard our action as one out of a series of actions displaying no intelligence. He would cheerfully admit that the action seemed intelligent, and by itself would justify the inference to a real intelligence behind it. But he would urge, if I take it as the one intelligent action out of an indefinite number of unintelligent actions, there is nothing in it that need cause surprise or calls for the assumption of real intelligence. We might try to convince him by multiplying the symptoms of intelligence, but in vain. For, though he would admit the growing improbability of such a continuous series of apparently purposive actions, he could still expand the context of non-purposive actions rapidly enough to maintain his theory of their chance origination.[9]

If, therefore, an indefinite number of non-adaptive variations be really granted, no adaptations, however numerous and complete, can ever prove an intelligent cause of variation. Even if all the known facts testified aloud to the

operation of an adapting intelligence, the Darwinian assumption might still be used to disprove all teleology, if unbounded license were given for the invention of hypothetical variations! Now, of course it is not contended that variations as known are all obviously adaptive; it is claimed rather that we do not know enough about them to say what their actual character is. But it must most strenuously be asserted that the Darwinian theory cannot be quoted as destructive of the action of purposive intelligence in organic evolution until the occurrence of indefinite variation has been raised from the position of a methodological device to that of an incontestable fact.

And even then it may be doubted whether the fortuitous character of the facts could ever be rendered incontestable. To defy refutation by the facts the teleologist has merely to adopt a device analogous to that of his opponent. Just as the latter could always assume a non-teleological extension of what seemed a teleological ordering, so the former can always assume a secret teleology within the seeming chance. This he can do in several ways; most thoroughly by assuming that the order purposed *exactly* coincided with the results of a fortuitous distribution, and was intended so to do. This ingenuity, however, would somewhat overreach itself. It would have to conceive the intelligence immanent in the world's order as one *aiming at concealment*. For our only method of discriminating between the results of 'design' and 'chance' is to observe a deviation from the fortuitous distribution (which betrays no preference for any particular result) in the direction of what may be conceived as a *more valuable* result. Hence in the case supposed, the deviation being nil, we should have no reason to suspect the presence of intelligence. And generally, one would have to hold that a supposition which rendered the results of 'design' and 'chance' undistinguishable abolished also the difference between the two conceptions; a world governed by such an intelligence would be *no better* than one wholly due to 'chance'.[10] By supposing, therefore, that the 'design' *makes no difference*, the teleologist would defeat his purpose.

But he can assume the intelligent deviation to be of whatever magnitude the facts demand, and by assuming it to be *small enough* he can suppose a purposively guided order which mimics chance, just as the antiteleologist could explain 'design' as a mimicry by chance. And so he can conceive a (really) teleological order infinitesimally different from one merely fortuitous, and the mere tabulation of statistics will never decide its actual character. The mere record of the throws will never tell us that once in a hundred throws the dice came up sixes by intelligent design (of a nefarious kind). And yet that single throw might have sufficed to win the game! Now in the history of Organic Evolution the really valuable events which help on progress are certainly of the extremest rarity. It is only once in an aeon that an 'accidental' variation distinguishes itself from a myriad others

by lifting organic structure permanently on to a higher plane. It is only once in centuries that a genius is born who does the same for social progress: the great events in history are utterly unique, and turn the course of things so thoroughly that they need never be repeated. But all uniqueness makes a mock of Science, which 'explains' by finding uniformities.

Hence the teleological and the anti-teleological interpretation of events will never decide their conflict by appealing to the facts: for in the facts each finds what it wills and comes prepared to see. And yet the facts will not *wholly* bear out either, so long as they present traces of what we can describe as disorder in the one case, or order in the other. The decision therefore needs an act of choice; it eminently calls for the exercise of our 'will to believe'; it rests, like all the ultimate assumptions of our knowledge, upon an act of faith.

VII. The position, then, is this: 1. If we take the Darwinian assumptions as methodological, they are perfectly legitimate, most fruitful and valuable, and establish the fundamental biological law of Natural Selection. But there is no conflict with the belief in teleology, and the Argument from Design remains unimpaired.

2. If we take the Darwinian assumption as representing a fact, it is certainly destructive of all teleology. But the fact is not established and is open to grave doubts on scientific grounds, while its destruction of the teleological argument is simply a foregone conclusion a priori.

3. If, while admitting that indefinite variation has not been shown to exist, we yet contend that it is the sole working assumption by which the facts can be investigated, and that the possibility of a purposive guidance must be rigidly excluded from Science, we simply beg the question. For certainly, if all the evidence is to be interpreted in accordance with such canons, no evidence for teleology can ever be found. One need not object to people wearing blue spectacles if they like—they are in fact often useful, if not ornamental—but it is ludicrous to maintain that everything is blue because we insist on looking through the spectacles.

This ought to constitute a sufficiently explicit answer to the question, Is Darwinism, properly understood, necessarily hostile to teleology? Not only have we been able to answer that question by an emphatic negative, but we have uncovered the source of the misunderstanding which led to the question. We might go on to raise rather the opposite question, and ask, Does Darwinism in any way tend to strengthen the Argument from Design and the belief in teleology? That would, perhaps, be asking too much; its services in this respect seem to be mostly of an indirect sort. It is often invigorating to be attacked, especially when the assault can be successfully repulsed, and perhaps in this sense the Argument from Design is the stronger for having been impugned in the name of Darwinism.

More can perhaps be extracted from another point brought out by Darwinism—viz., from the fact that Natural Selection is a universal law of life operating indifferently, whether there is stagnation, degeneration, or progression. From this it may be inferred that the ghastly law of struggle for existence, the cruel necessity which engages every living thing in almost unceasing warfare, while not itself the cause of progression, is yet capable of being rendered subservient to the cause of progression. The progress, the adaptations, actually found, are certainly not due to Natural Selection: yet neither does Natural Selection form an obstacle to their occurrence. Nay, we may conjecture that the power which makes for progress, a power which we may divine to work for nobler ends, is lord also of Natural Selection, and can render it a pliable instrument of its purpose, a sanction to enforce the law of progress, a goad to urge on laggards.

What that power may be Darwinism cannot directly tell us. Before we could ascribe to it a pronouncedly teleological character, we should have to measure our strength against a number of possible factors in Organic Evolution as 'mechanical' as Darwinism. But I believe it could be shown that all these mechanical laws of Evolution, from Spencer's law of differentiation downwards, fail just where Darwinism pure and simple failed—viz., in accounting for the historical fact of progress. Either, therefore, we should have to admit that an as yet unformulated mechanical law of Evolution accounted for progression, or that it was due to an agency of a different order, to the guidance of an intelligent and purposive activity. It may be suggested, however, that a critical examination of the current mechanical theories of Evolution must distinctly strengthen the belief that there has been operative in the history of life an intelligent force to which we must ascribe the progression and direction of the process of Evolution. And inasmuch as Darwinism occupies a leading place among these mechanical theories, its examination will greatly conduce to that result.

We have discussed so far only mechanical theories of Evolution. But in itself Evolution is not necessarily bound to be mechanical; it is perfectly possible to regard it as the gradual working out of a divine purpose. And once we adopt the evolutionist standpoint, it is clear that the Argument from Design is materially and perceptibly strengthened. (1) Positively, because Evolutionism lets us as it were behind the scenes and shows us how means are adapted to ends in the gradual process of Evolution. This renders easier and more comprehensible the belief underlying all teleology in a power that intelligently adapts means to ends. (2) Negatively, Evolutionism greatly weakens the objection to the teleological argument based on the imperfection of existing adaptations. We are no longer compelled to proclaim everything already perfect; it suffices that we can find nourishment for the faith that everything is being made perfect.

If, then, Evolutionism strengthens the Argument from Design, the latter indirectly owes a debt of gratitude to the theories which have facilitated the adoption of the Evolutionist standpoint. And among these Darwinism stands pre-Evolutionism was as old as one of the earliest of Greek philosophies;[11] but it was not until Darwinism made it a household word that it could force its way into the consciousness of men at large. And as a philosopher who regards Evolutionism in some form as affording the most hopeful method of approaching the mystery of existence, I am inclined to hold that when historical perspective has cleared away the molehills we have made into mountains, it will be here that will be found Darwin's most momentous and enduring service to knowledge and to mankind.

NOTES

1. Published in the *Contemporary Review* for June 1897. It had been my intention to have followed this paper up with discussions of other scientific views of Evolution (which explains my success in avoiding so much as the mention of Prof. Weismann's name), and finally to attempt the philosophic formulation of the conception of Progress which the current science assumes and the current metaphysic denies, without comprehending its nature. But *dis aliter visurn*, and the paper (to which §IV. and the end of §VI. are additions), seemed worth including even as a fragment. For a discussion of the ultimate philosophic significance of Teleology, cp. *Personal Idealism*, pp. 118-121.

2. *Ethical Import of Darwinism*, p. 78.

3. *Materials for the Study of Variation*.

4. *Origin of Species*, ii. pp. 83, 90, 117.

5. Similarly Darwinian discussions of the definition of 'higher' and 'lower', of the persistence of lower forms and of the source of progression generally find refuge in our immense ignorance of the past, and exhibit only the reluctance of their authors to tie themselves down to precise formulations.—Cp. *Origin of Species*, ii. pp. 117, 151, 243, 274. Wallace, *Darwinism*, p. 120.

6. It is supposed that albinos tend to be produced by in-breeding, and hence the supply is always kept up in spite of Natural Selection.

7. Even so excellent a thing as Pragmatism may be overdone! In fact it usually is, by its critics and in popular thinking, when methodological assumptions of limited applicability are mistaken for absolute truths.

8. *Origin of Species*, i. p. 97.

9. Cp. pp. 71-72.

10. Cp. James, *Varieties of Religious Experience*, pp. 443-447, and *Philosophical Conceptions and Practical Results*, pp. 9-11.

11. That of Anaximander: see *Mind!* p. 129.

18

THE ETHICAL SIGNIFICANCE OF IMMORTALITY

We are so accustomed in these days to hear the world-old traditions of the human race denied or ignored simply because they are old that the antique flavour inevitably attaching to any argument about Immortality almost suffices to secure its condemnation unheard. Yet such scornful treatment of authority is not justified by the present state of our knowledge. On the contrary, the antiquity and wide prevalence of an idea in themselves constitute a prima facie claim upon the attention of the unprejudiced. Even on our most modern principles of evolutionist explanation, it means that the idea is somehow a response to a widely felt and persistent element in our experience. Its very antiquity, therefore, gives it an authority which may not be lightly set aside.

Still I do not wish to argue this question of Immortality on the basis of authority. There is another side also to the influence of authority, when that authority is old. It is probable in such cases that the idea supported by authority will be disfigured by the dust of ages, overgrown with all sorts of parasitic fungi of fancy, and rendered ridiculous by the incrustations of fossil formulas, until its best friends hardly know it and it becomes intellectually contemptible, morally outrageous and aesthetically repulsive to its foes. As something of this

Humanism: Philosophical Essays (London and New York: Macmillan, 1903), pp. 250–265.

sort has probably happened to the idea of immortality, it will be the plan of this paper to argue the question on the sole ground of reason; its only stipulation being that the appeal be really made to the light of reason, shining without let or hindrance, and as far as possible freed from all coloured spectacles of religious or scientific orthodoxy that might check its transmission.

The subject of Immortality is, however, so extensive that it would be hopeless to attempt to discuss it as a whole, and my efforts will be confined to a single aspect of it—the ethical. That is, I shall *not* try to determine whether there is immortality as a fact, but only whether the science of ethics needs this conception for its own perfection. Putting the question more technically, I propose to consider two things. First: Is Immortality an ethical postulate? Must a moral being, i.e., a being that can be judged good or evil, as such, be deemed immortal? Secondly: If so, what does an ethical postulate prove? What is its general significance or logical status in the world of thought? The first of these questions is exclusively ethical. The second enters upon the realm of metaphysics, and may be expected to involve so much subtler and more difficult considerations that I would gladly evade it altogether if possible. But, unfortunately, it is necessary to carry the case to the supreme court of metaphysics in order to enforce the due respect for an ethical postulate. Moreover, it is only the discussion of its metaphysical value that gives the ethical argument any direct bearing on the question, not here to be discussed as such, whether there is immortality as a matter of fact.

I

Let us take up, then, the first question, whether immortality is an ethical postulate. What can be urged in favour of this view? The argument for it is exceedingly simple: it consists in showing that without immortality it is not possible to think the world as a harmonious whole, as a moral cosmos. To show this, one has not to appeal to anything more recondite than the fact that in our present phase of existence the moral life cannot be lived out to its completion, that it is not permitted to display its full fruitage of consequences for good and for evil. Whenever Might triumphs over Right; whenever the evildoers succeed and the righteous perish, whenever goodness is trampled underfoot and wickedness is exalted to high places; nay, whenever the moral development of character is cut short and rendered vain by death,—we are brought face to face with facts which constitute an indictment of cosmic justice, which are inconsistent with the conception of the world as a moral order. Unless, therefore, we can vindicate this order by explaining away the facts that would otherwise destroy it, we have to

abandon the ethical judgment of the world of our experience as good or bad; we have to admit that the ideal of goodness is an illusion of which the scheme of things recks not at all.

But if we refuse to do this (and whether we are not bound to refuse to abandon our ideals at the first show of opposition will presently be considered), how shall the ethical harmony be restored if not by the supposition of a prolongation and perfection of the moral life in the future? Only so can character be made of real significance in the scheme of things; only so is it something worth possessing, an investment more permanent and more decisive of our weal and woe than all the outward goods men set their hearts upon, rather than a transitory bubble to whose splendour it matters not one whit whether it be pure translucence refracting the radiance of the sunlight, or the iridescent film that coats decay.

The ethical argument for immortality, then, is simply this, that, if death ends all, the moral life cannot be lived out, moral perfection is impossible, and the universe can not be regarded as at heart ethical. But in spite of its simplicity this argument has been misunderstood in a variety of ways. Let us briefly consider the chief of these.

It is objected by well-meaning people, who rather pride themselves on their advocacy of a purer and higher morality, that the ethical sphere does not need supplementing by a future life. They grow indignant at the thought that 'the good men do is buried in their graves', and does not survive to inspire and direct succeeding generations. They bid us therefore fight the good fight disinterestedly and without selfish reward, in order that our grandchildren, if we have any, may enjoy the fruits of our self-denial, and that the world may be the better for our efforts.

To this the reply is twofold. It is idle to say that Goodness is not wasted because the results of actions reverberate throughout the ages. The good men *do* may persist and work well or ill, but the good men *are* surely perishes. The human character itself passes away, and its effects are transmitted only through the characters of others. The character itself is an indefeasible and inalienable possession of the owner, and by no flight of the imagination can it be transferred to others. Whatever worth, therefore, we assign to character, that worth is lost to the world if immortality be denied. And, moreover, it is only in their effect upon his own character that a man's actions can be surely classified as good or bad. What the effect of actions will be on others, now or subsequently, no one can foretell: the real objection to doing too much for posterity is, not that 'posterity has done nothing for us', but the uncertainty as to what the effect on posterity will be. For that depends largely on the character of others, and *quisque suos patimur Manes*. Each can assume full responsibility for his own actions and his own character alone; the rest lies largely on the lap of the gods. If then, you deny the

persistence of character, you have denied the real basis of the moral order.

But, secondly, supposing even that humanity profited by our efforts, how far would this go towards re-establishing the moral order of the world? If the immortality of the individual be an illusion, surely that of the race is a transparent absurdity. If there is certainty about any prediction of science, it is surely, as I have elsewhere put it, this, that our racial destiny is "to shiver and to starve to death in ever-deepening gloom."[1] The prospective fortunes of the race, then, do not redeem the moral character of the universe. If the view of mechanical science be the whole truth about the universe, the race is of just as little account as the individual; suns and stars and the hosts of heaven will roll on in their orbits just as steadily and unfeelingly whether we prosper or perish, struggle on or resign ourselves to despair. Cosmically, the earth and all it bears on its surface is of infinitesimal importance: what does it matter then whether any one brood of mites that crawls upon it is better or worse than its successors, any more than whether it laboriously grubs up a few atoms of a shining yellow or of a shining white metal and fights about the ratio? No; the worthy people who think that George Eliot's 'choir invisible' can make a noise to compete with the whirl of worlds decidedly delude themselves, and 'an immortality of influence' is no adequate ethical substitute for personal immortality.

A second objection does not pretend to improve on the ethic of immortality, but criticises it by descanting on the turpitude of basing morality on 'fears of Hell and hopes of Paradise'. This objection also is urged by many worthy persons; and I have known some who have been sustained through life by the pride they took in showing that they could be just as moral without knowing why, as they were when they thought their eternal salvation depended on their conduct. But theoretically this objection surely rests on a misconception. The rewards and punishments for conduct are not to be looked upon as *motives* to conduct, but as the natural *results* of conduct, inevitable in a morally ordered universe. In an ethical universe, Goodness cannot be associated with persistent misery, because that would be an outrage upon the moral order; Badness must ultimately involve unhappiness, because only such retribution will reaffirm the outraged supremacy of the moral order. Rewards and punishments, then, are but incidents in that completion of the moral life for the sake of which immortality was postulated; they are not in themselves the sole motives for leading such a life. The very suggestion that they may be supposed to be, on whatever side it is urged, shows an imperfect appreciation of the nature of the moral life, indicative of a coarser moral fibre and of a lower stage of ethical development.

But we need not on this account entirely condemn this mode of regarding immortality. Fears and hopes of what may happen hereafter may

not be the highest motives to morality; they may enforce as an external sanction what should be an intrinsic conviction; but they are not therefore valueless. For, if they are effective, they at least *accustom* men to right conduct,[2] and thus form the basis of sound habit, which is the actual foundation of all conduct in any case, and the necessary prerequisite for sound reflection upon conduct and the attainment of any higher view of morality. Our moral enthusiasm, therefore, need no more frown upon these lower motives than it need disband the police on the ground that a truly moral community should not need policing.

Still more radical than the objections we have considered is a third objection which denounces the essential immorality of looking to a future life at all in connexion with our conduct here. The habit of contemplating a future life, it is urged, engenders a pernicious 'other worldliness' most detrimental to proper behaviour in this world. We cannot live for two worlds at once. The future life dwarfs the present; the supposed significance of the eternal life hereafter destroys the real significance of our life here and now.

Again, I think the objection labours under a misconception. It holds good only against a conception of immortality which, like the Buddhist Nirvana, for example, conflicts and competes with the ethical view of this world: We cannot 'live for two worlds at once', only if the principles of conduct required in them are fundamentally different. If extinction is the end to which we should aspire hereafter, then certainly it would be folly to prepare for it by a strenuous life on earth. The objection is irrelevant to an immortality which is postulated as the completion of mundane morality which is not so much *other-worldliness* as *better-worldliness*, suggested by the ethical defects of our actual experience. In reality such a view indefinitely deepens the significance of the present life. Think what is involved in the assertion that character is permanent and indestructible, and passes not from us however the fashion of our outward life may change! Think of it, that we can never escape from ourselves, from the effect of our deeds on our character, and that every deed leaves its mark upon the soul, a mark which may be modified, but can never be undone to all eternity! Will not the effect of such a belief be to make us realise the solemnity of life as we never did before, to nerve us to that unremitting self-improvement without which there is no approximating to the moral ideal? Instead of losing its significance, does not every act of life become fraught with infinite significance? Instead of becoming careless about ourselves, will it not, then, become worth our while to bestow upon our own character-building a care that would otherwise have been disproportionate? For, as most of them are thoroughly aware, ordinary people are quite good enough for ordinary purposes. Why, then, should they strive laboriously to change and remould

themselves, and fall, perchance, into the exaggerated virtue of Jane Austen Beecher Stowe de Rouse, who was "good beyond all earthly need"? Is it not much more convenient to stay as one is, and to reply to the ambitions of an unquiet conscience as the General of the Jesuits replied to the Pope who wished to reform them, *Sint ut sunt aut non sint*,—'Let them be as they are or not be at all'? Is it not always inconvenient to think of the future, and is not the future life altogether too big a thing to think of? And is not this, and not any logical or scientific difficulties which the thought involves, the real reason why men seek to banish it from their consciousness,—why it is hardly ever more than a half belief in most men's minds? Human inertia, all that keeps us commonplace and sordid, unheroic and unaspiring is, and always has been, dead against it. And that is why moral reformers have always insisted on it. For their function is to overcome moral inertia.

It is, however, some consolation to think that the past course of Evolution seemingly sanctions the belief of those who would have us take account of a future which extends into another life. Certainly the expansion of the future, of which our action takes account, is one of the most marked characteristics of a progressive civilisation. The animal looks into the future not at all, and the savage but little; but, as civilisation grows, the future consequences of action become more and more important, and are prepared for more and more. When we have dared to forecast the future of the race when our coal supply shall be exhausted; when we have looked unflinchingly upon that unimaginably distant period when the sun's light shall fail,—shall we shrink from rising to the contemplation of a future that extends immeasurably further?

II

By thus replying to these three objections I hope to have sufficiently established the first part of my thesis,—that immortality is in truth an ethical postulate. But the second part still remains to be answered, namely, the question, What is an ethical postulate really worth? What is its value metaphysically? Is it more than an impulse of ethical emotion which shrinks into nothingness under the calm gaze of scientific truth? Does it amount to demonstration?

One often hears it said that immortality is an emotional postulate, unreasoning if not unreasonable; and that hackneyed phrase, 'the hope of immortality', bears involuntary witness to the fact that the argument is not supposed to amount to demonstration. Now this is just the mental attitude towards the subject which I deprecate and wish to controvert. The people who cherish the *hope* of immortality I regard as people who, for the reasons

given above, *sometimes hope there is no immortality*, or at least have not much faith in their own argument. It is more especially for the benefit of such weak-kneed brethren that I would maintain the following doctrine: —

The ethical postulate of immortality is not an emotional postulate, but as rational as any postulate, and with as good a claim for recognition in our ultimate metaphysic. Or, if they still prefer to regard it as emotional, and quote Von Hartmann's remark on the subject that metaphysical truths cannot be based on emotional postulates, I shall reply that, ultimately, truths will nowhere be found to rest on any other grounds.

(1) Hence immortality, as an ethical postulate, is of the same nature as certain other postulates without which we cannot harmonise our experience.

(2) It is bound up with those other postulates.

(3) Its assumption is justified in precisely the same way as that of the other postulates.

(4) If they cannot accept this as demonstration they will get no better anywhere in the world.

(1) Taking these points in order, let us ask what is the nature of an ethical postulate. It is nothing but the affirmation of the significance of the ideal of *Goodness*, of our *ethical valuation* of things. It claims that the universe is not merely a fact, but has a certain value which we call ethical. It is at bottom a moral universe, and potentially resolves itself into an ethical harmony. Now the logical method by which this argument proceeds is this: Given a part, to find the whole; given a few fragmentary data, to construct therefrom an ideal which may validly be used to interpret the data. It is the same method which is used by the paleontologist when, from a tooth or a bone, he reconstructs some long-extinct form of life. The question, then, resolves itself into this: Have we the right to assume that our ethical data cohere and may be fitted together into an ethical ideal?

And (2), in sustaining this procedure the ethical consciousness does not stand alone. Its claim is supported by our procedure elsewhere. *All* the ideals of ultimate value are constituted in the same manner. How do we make good the claim that anything in the universe is beautiful? We assume that our judgments concerning beauty are not devoid of significance, but may be harmonised in an ideal of Beauty to which the nature of things is somehow akin. How do we make good the claim that happiness is possible? We believe in the prophetic significance of the pleasurable states of consciousness in our experience, and out of them frame the ideal of Happiness which we assume reality may realise.

Lastly, how do we make good the claim that the world is knowable? We assume that its facts somehow cohere, and may be arranged in an orderly system of Truth or Knowledge. In other words, we try to look upon reality

as realising our ideals of Knowledge, Beauty, Goodness and Happiness, and thereby constitute it a cosmos, knowable, beautiful, ethical and delightful. But in each case we are checked by the same obstacles. The ideals certainly do not float on the surface of life. They are not congruous with the raw facts of experience. They have to be sought with infinite pains, and ere we have dragged them forth and proved them valid, lo, death comes and, ruthlessly impartial, cuts short the careers of the man of science and of the man of pleasure. Life is imperfect and fragmentary all round,—not only in the eyes of ethics. Emotionally, intellectually and aesthetically, life as it stands is no less inadequate than ethically. The ideals of Happiness, Knowledge and Beauty postulate realisation no less and in no other way than Goodness; the murky atmosphere of earth, poisoned by the breath of death, no less derides their possibility. What we ask, then, for one we ask for all, and we ask it in obedience to the same law of our being,—that life must show itself congruous with the ideals from which it draws its value.

And (3), these ideals are not only cognate, but coincident; we cannot in the last resort affirm one while denying the rest; nothing short of a complete harmony can wholly satisfy us. Truth, Goodness, Happiness and Beauty are all indispensable factors in Perfection, the varying facets which the one ideal reveals to our various modes of striving.[3]

This is generally denied only by the votaries of the ideal of Truth, and so it will perhaps suffice if I content myself with pointing out to them how untenable is their position. We have all heard some postulate of human feeling met with the cold sneer of a short-sighted science and the query, Why should the universe take account of goodness and its completion? Well, I contend that if this sneer is worth anything it must be extended so as to include all human activity, that we might with equal cogency go on to ask, Why, then, should the universe take account of Knowledge and its establishment, or of Happiness and its attainment? We have, I claim, no logical ground for supposing the world to be knowable, and yet utterly disregardful of Happiness and Goodness. For a world supposed to be wholly knowable, i.e. wholly harmonious with our intellectual demands, while remaining wholly discordant with our emotional nature, would *ipso facto* include an intellectually insoluble puzzle which would render it fundamentally *unknowable*. Nay, more, is not the supposition directly self-contradictory? Does not a knowable world satisfy at least one of our emotional demands,—the desire for Knowledge? It cannot be then, as alleged, *utterly* out of relation to our emotional nature. But if it can satisfy one such postulate, why not the rest?

The ideals, then, stand and fall together. They are rooted in the unity of the human soul, in the final solidarity of life's endeavours. And when the supreme need arises, the outcry of the soul can summon to its aid all the

powers that minister unto its being; it wields a spell that reaches from the iciest altitudes of scientific abstraction to the warmest pulsations of concrete emotion, and from the most ethereal fancy of the purest intellect to the blindest impulse of agonising passion; it can extort from every element of our nature the confession of its solidarity with the rest of life, and set it in array on that dread battlefield whereon the Gods contend against the Giants—of Doubt, Disorder, and Despair.

For it is because of this solidarity of the ideals that the denial of them confronts us with the gravest issues. They all assert, in varying form but with unvarying intent, the same great principle—the conformity of the world with the capacity of our nature. And unfamiliar as some of the applications of this principle may be to our ordinary habits of thinking, we have to remember that the principle itself can hardly be impugned. For inasmuch as in the end the world is human experience, and a world which we neither did nor could experience would not be one we need argue or trouble about, this principle really amounts to an assertion of the intrinsic coherence and potential harmony of the whole of experience. Without it where should we be? What would our attitude have to be towards a world in which the ultimate significance of our ideals was denied, that is, a world which was no world, a world in which nothing really meant anything, nothing was really good or beautiful or true, and in which the hope of happiness was nothing but illusion? To say that the prospect of such a world would reduce us to the most despairing depths of the most abject Pessimism hardly depicts the full horror of the situation: it would be a world of which the hopelessness would disarm even the suicide's hand. For, in a world which had really renounced its allegiance to the ideal, all action would be paralysed by the conviction that nothing we desired could ever be attained, because the existent was irreconcilably alienated from the desirable. The foundations of the cosmos would be shattered, and we should have to realise that nothing is worth doing because nothing has any worth, because human valuations have no significance in establishing the nature of things. We should be plunged, in other words, in that unfathomable abyss where Scepticism fraternises with Pessimism, and they hug their miseries in chaos undisguised.

(4) We can reject, then, the principle on which the ethical postulate of immortality rests only at the cost of entire Scepticism and utter Pessimism. By those not prepared to pay that price the principle must be accepted, like the other assumptions that render the world a fit sphere for the satisfaction of other human activities. Take, for instance, the assumption that the world is a knowable cosmos. Is this proved? Certainly not; nor can it be until everything is known: until then it always remains possible that the world may not turn out really knowable at the last. Can we avoid assuming it?

Certainly not; without it we could not take a single step towards any science or practice. We simply *must* assume that the world is an intelligible world, if we are to live in it. As a matter of fact we do assume it, all except a few who bury their dissent in the seclusion of the madhouse. Is the assumption confirmed? Yes, in the only way in which such fundamental assumptions ever are confirmed: the further we trust it the more we know, the more confident in it we grow.

The assumption of a moral cosmos is made and confirmed in the same way. We cannot prove it to be correct so long as the world is not morally perfect; we cannot wholly exorcise the recurrent dread that, after all, the moral order may of a sudden lapse into chaos before our eyes: but we cannot organise our moral experience without this assumption, and in the course of moral development our confidence in it grows.

But, it may be said, if there is no essential difference between the assumption of a moral and that of an intellectual order in our experience, how is it that the former appears so much less certain than the latter? Why are we so much more confident that the world is subject to natural than to moral law? Why are *moral* so much more commoner and more successful than *intellectual* sceptics? These facts are not to be disputed, but I think they can be explained. Undoubtedly the moral order is not so strong as the scientific, and its principles have not such a hold on human nature. The rebels against the moral order are not all in prison; our rascals largely run about unhanged. 'Moral insanity' is pleaded in mitigation of the punishment which it should render inexorable. But the difference is due simply to the different amounts of experience behind the two assumptions. Historically man was a knowing being long before he was an ethical being. He had lived long, as Aristotle said, before he had lived well; both in time and in urgency, perceptual adaptation to the physical order took precedence over ethical adaptation to the social order. Man had to assume, therefore, the principles that constituted the world a knowable cosmos long before he needed to assume a moral order. Hence the beliefs in the uniformity and calculability of Nature and the like have a much greater and more unequivocal mass of racial experience and hereditary instinct behind them than any moral instinct we have yet acquired. But this does not show that the nature of the several assumptions is not essentially the same.

If the argument of this paper has commended itself so far, there will probably be little difficulty in granting the last point, that the demonstration of Immortality proffered by the ethical argument is as complete as any that can be devised. But, to enforce the point, allusion may be made to the fact that demonstration is in its very nature what the logicians call *hypothetical*. It proceeds in the form, If A is, then B must be. But how are we to know that A is? The premiss has to be assumed or conceded in every demonstra-

tion. The utmost we can do is to rest our demonstration on an assumption so fundamental that none will dare to question it; and this we here seem to have accomplished. For what could be more fundamental than the assumption on which the ethical argument rests—that the elements of our experience admit of being harmonised, that the world is truly a *cosmos*? If this be not absolute certainty, it is at least certainty such that, while no assertion of any special science is less hypothetical, none rests upon an *equally* indispensable assumption.

On the whole, then, the ethical argument for immortality seems logically as sound and metaphysically as legitimate as any argument can well be; but it will not be amiss to allude in closing to two points about which nothing has so far been said. The first is the fact that, when immortality has been shown to be an ethical postulate, nothing has been decided as to the *content* of that idea. All we know is that immortality must be of such a sort as to be capable of being an ethical postulate. And it is quite possible that the science of ethics would on this ground find much to protest against in many of the traditional forms of the belief in immortality, while it would find little to object to in others which are less familiar. It is difficult, for instance, to see how eternal damnation could be regarded as an ethical postulate, while some appropriate modification of the Hindu notion of *karma* might seem ethically welcome. But though ethics could thus *prohibit* certain ethically outrageous beliefs in immortality, it cannot aspire *positively* to *determine* the way in which its postulate is to be realised. That problem lies beyond its scope, and has to be determined, if at all, by considerations of a scientific and metaphysical character. Hence the moral argument for immortality is in a manner incomplete: first, because a moral postulate cannot as such inform us as to the method of its realisation; and secondly, because, disguise it as we may, our faith in a cosmic order which includes the moral remains still capable of further confirmation. For, however firm our trust in the rationality of life, few would contend that the discovery of scientific facts consonant with our ethical demands would add nothing to the assurance of their faith.

And so, lastly, a word must be said on the subject of these scientific and metaphysical arguments about immortality which were excluded as irrelevant to the ethical aspect of the question, in order to bring out the important fact that, however they may be supposed to result, the ethical argument maintains its independent validity. So far as I can see, these further arguments may result in three different ways. They may confirm the ethical argument—in which case our confidence in immortality will be strengthened. They may balance each other—in which case they will leave the field open for the ethical argument. Or, in the worst event, they may preponderatingly conflict with it. But, even so, it would not follow that they were right

and the ethical argument was wrong, at least until the plea for the essential solidarity of the ultimate postulates had been invalidated. A world in which the ethical ideal is abrogated and annulled cannot be a harmonious world; and if it be not harmonious throughout, we can feel no confidence that it is harmonious in any part. In other words, so long as we trust in the ultimate presupposition of all knowledge and all action, we could never quite trust the non-ethical arguments that are supposed to plunge us in perplexity.

NOTES

1. *Riddles of the Sphinx*, p. 105.
2. Cp. pp. 33-35.
3. See *Riddles of the Sphinx*, ch. xii §9.

19

FAITH, REASON, AND RELIGION

§1. The nature of religion, and the extent to which what is vaguely and ambiguously called 'faith' and what is (quite as vaguely and ambiguously) called 'reason' enter into it, rank high among the problems of perennial human interest—in part, perhaps, because it seems impossible to arrive at any settlement which will appear equally cogent and satisfactory to all human minds. Of late, however, the old controversies have been rekindled into the liveliest incandescence, in consequence of two purely philosophic developments.

On the one hand, Absolutism, despite its long coquettings with theology, has revealed itself as fundamentally hostile to popular religion (see Essay xii.). In works like Mr. Bradley's *Appearance and Reality* and still more formidably, because more lucidly and simply, in Dr. McTaggart's *Some Dogmas of Religion*, it has reduced Christian Theism to what seems a position of grotesque absurdity by an incisive criticism from which there is no escape so long as its victim accepts the rationalistic tests and conceptions of truth and proof with which it operates.

On the other hand, it has simultaneously happened that just these tests

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Studies in Humanism, 2nd edn. (London and New York: Macmillan, 1912), pp. 349–369.

and conceptions have been impugned, and to a large extent condemned by the pragmatic movement in philosophy. It threatens to deprive Rationalism[1] of its favourite weapons just as it is about to drive them home. It promises to lead to a far juster and more sympathetic, because more psychological, appreciation of the postulates of the religious consciousness, and to render possible an unprejudiced consideration of the non-'rational' and non-rationalistic evidence on which religion has all along relied. And so rationalistic philosophers have at once taken alarm.

Hence, though this movement appears to affect immediately nothing but technicalities of the theory of knowledge, it has been extensively taken as an attempt at a revolutionary reversal of the relations of Faith and Reason. The new philosophy was promptly accused of aiming at the oppression, nay, at the subversion, of Reason, of paving the way to the vilest obscurantism and the grossest superstition with the ruins of the edifice of truth which its scepticism had exploded; in short, of attempting to base Religion on the quicksands of irrationality. But, it was urged, the dangerous expedients which are used recoil upon their authors: the appeal to the will-to-believe ends by sanctioning the arbitrary adoption of any belief any one may chance to fancy, and thus destroys all objectivity in religious systems; religious sentiment is freed from the repressive régime of a rigid rationalism only to be ignobly dissipated in excesses of subjective licence.

Now, the first thing that strikes one about such denunciations is their premature violence. The opponents of the new *Humanism* should have met it on the logical, and still more on the psychological, ground whence its challenge proceeded, before they hastened to extract from it religious applications which had certainly not been made, and possibly were not even intended, by its authors, and which there is, as yet, hardly a sign, in this country at least, that the spokesmen of the religious organizations are willing to welcome. And until the leaders of the churches show more distinct symptoms of interest, both in the disputes of philosophers in general and in this dispute in particular, it seems premature to anticipate from this source the revolution which is decried in advance. Theologians, in general, have heard 'Wolf!' cried too often by philosophers anxious to invoke against their opponents more forcible arguments than those of mere reason, they have found too often how treacherous were the specious promises of philosophic support, they are too much absorbed in historical and critical researches and perplexities of their own to heed lightly outcries of this sort.

The controversy, then, has not yet descended from the study into the market-place, and it seems still time to attempt to estimate philosophically the real bearing of *Humanism* on the religious problem, and to define the functions which it actually assigns to reason and to faith. It may reasonably be anticipated that the results of the inquiry will be found to justify neither

the hopes of those who expect an explicit endorsement of any sectarian form of religion (if such there are), nor the fears of those who dread a systematic demolition of the reason.

§2. Perhaps a brief historic retrospect will form the best approach to the points at issue. Thoughtful theologians have always perceived, what their rationalistic critics have blindly ignored, viz. that religious truths are not, like mathematical, such as directly and universally to impose themselves on all minds. They have seen, that is, that the religious attitude essentially implies the addition of what was called 'faith' for its proper appreciation. This 'faith', moreover, was conceived as an intensely *personal* act, as an emotional reaction of a man's whole nature upon a vital issue. It followed that it was unreasonable, on the part of rationalists, to ignore this specific character of religious truth or to treat it as irrational. And it was this perception which prompted a Pascal to array the 'reasons of the heart' against the (abstract) reasons of 'the head', a Newman to compile his *Grammar of Assent*, and a Ritschl to spurn the pseudo-demonstration of (a Hegelian) philosophy, and to construct an impregnable citadel for the religious sentiment in the exalted sphere of 'judgments of value'.

Accordingly, when that great student of the human soul, William James, proclaimed the right of inclining the nicely-weighted equipoise of intellectual argumentation by throwing into the scales a will-to-believe whichever of the alternatives seemed most consonant with our emotional nature, it might well have seemed that he was merely reviving and rewording a familiar theological expedient which philosophy had long ago discredited as the last desperate resource of an expiring religious instinct.

It turned out, however, that there was an important novelty in the doctrine as revived. It reappeared as a *philosophic* doctrine, firmly resting on psychological and epistemological considerations which were, intrinsically, quite independent of its religious applications, and took the field quite prepared to conduct, on purely philosophic grounds, a vigorous campaign against the intellectualist prejudices of the current rationalism. In other words, by conceiving the function of 'faith' as an example of a general principle, the religious applications, through which the principle had first been noticed and tested, were rendered derivative illustrations of a far-reaching philosophic view. It ceased, therefore, to be necessary to *oppose* the reasons of the heart to those of the head; it could be maintained that no 'reasons' could be excogitated by an anemic brain to which no heart supplied the life-blood; it could be denied that the operations of the 'illative sense' and the sphere of value-judgments were restricted to religious truths. The new philosophy, moreover, as we have seen,[2] has been taught by the sceptical results to which the old abstractions led, that knowledge cannot be *depersonalized*, and that the full concreteness of personal interest is indispen-

sable for the attainment of truth. Hence the theologians' insistence on the personal character of 'faith', which on the old assumptions had seemed a logical absurdity, was completely vindicated. And so the indications of emotional influence, are the proofs of the ineradicability of personality, multiplied throughout the realm of truth, until the apparently dispassionate procedure of mathematics ceased to seem typical and became a paradox.[3] Thus, throughout the ordinary range of what mankind esteems as 'truth', the function of volition and selection, and the influence of values in all recognition of validity and reality, have become too clear to be ignored, and there has resulted the curious consequence that, by the very process of working out the claims of faith fairly to their logical conclusion, 'faith' has ceased to be an adversary of and a substitute for 'reason', and become an essential ingredient in its constitution. Reason, therefore, is incapacitated from systematically contesting the validity of faith, because faith is proved to be essential to its own validity.

§3. The sweeping nature of this change was at first obscured by the accident that the new philosophy was first applied in a paper written for a theological audience, and promulgated as a 'Will-to-believe', without sufficient emphasis on the corresponding attitudes of a Will-to-disbelieve or to play with beliefs, or to suspend belief, or to allow belief to be imposed by what had already been *accepted* as external 'fact'. Thus it was the special character of the first application that led the less discerning to overlook the general character of the principle and the universal scope of the method. But in itself the new doctrine is perfectly general and impartial in its application to all cognitive states. It proceeds essentially from simple observations that, on the one hand, pure cognition is not an actual process in any human mind, but at best a fiction for theoretic purposes (of the most dubious character); while, on the other, all actual mental procedure is thoroughly personal and permeated through and through with purposes and aims and feelings and emotions and decisions and selections even in such cases where these features are ostensibly abstracted from.

Fundamentally, therefore, the new *Humanism* is nothing but an attempt to dismiss from psychology fictions which have been allowed to engender a brood of logical monsters, which in their turn have tyrannized over human life, and driven back the healthy human instinct to experiment, and thereby to know, from what they perniciously proclaimed forbidden ground. And as this fundamental position has never directly been impugned, does it not become an easy and inevitable inference, that the attitude of the denier, the doubter, and the believer cannot be discriminated by the 'pureness' of the thought, by the test of the presence or absence of emotion? If no thought is ever 'pure', if it is neither 'self-evident' nor true in point of fact that the more nearly ' pure' it is the better it is for all purposes,

if emotion, volition, interest, and bias impartially accompany all cognitive procedures, is it not preposterous to treat the concrete nature of the mind, the personal interests which give an impulse to knowledge and a zest to life, merely as impediments in the search for truth? What emotions, etc., must be repressed, to what extent, for what purposes, depends entirely on the character of the particular inquiry and of the particular inquirer. Thus, the anger which leaves one man speechless will add eloquence and effect to the speeches of another; and the desire to prove a conclusion, which impairs the judgment of one, will stimulate another to the most ingenious experiments and the most laborious efforts. It is useless, therefore, to generalize at random about the cognitive effect of these psychological influences. They must be admitted in principle, and evaluated in detail. It *must* surely be futile to protest against the normal functioning of the mind; it must be rational to recognize influences which affect us, whether we approve of them or not. For how can they be estimated and treated rationally, unless we consent to recognize their potency? Has it not then become necessary to examine, patiently and in detail, how precisely these forces act; how, when, and to what extent their influence may be helpful or adverse, how they may be strengthened and guided and guarded or controlled and disciplined? And is it not a strange irony that impels a purblind rationalism to denounce as irrational so reasonable an undertaking?

§4. Let us therefore set aside such protests, and proceed with our inquiry. Like most terms when scrutinized, neither reason nor faith are conceived with sufficient precision for our scientific purpose, and it would be hard to say which of them had been misused in a more flagrant or question-begging way. Reason to the rationalist has become a sort of verbal fetish, hedged round with emotional taboos, which exempt it from all rational criticism. It is credited with supra-mundane powers of cognition a priori; it is sacrosanct itself; and when its protecting aegis is cast over any errors or absurdities, it becomes blasphemy and 'scepticism' to ask for their credentials. Hence it is only with the utmost trepidation that we can dare to ask—What, after all, does reason mean in actual life? When, however, we ask this question, and ponder on the answer, we shall not be slow to discover that, in the first place, *reason is not reasoning*. Reasoning may, of course, enter into the 'rational' act, but it is by no means indispensable, and even when it does occur, it only forms a small part of the total process. Ordinarily instinct, impulse, and habit account for by far the greater number of our 'rational' acts. On the other hand, it is *not* rational to 'reason' three hours a day about the clothes one is going to put on; the reasoning of the victims of such 'abulia', so far from being taken as a mark of superior rationality, is taken as a symptom of a *loss of reason*.

In the next place, 'reason' is *not a faculty*. It stands for a group of habits

which men (and to some extent some animals) have acquired, and which we find extremely useful, nay necessary, for the successful carrying on of life. Among these habits may be mentioned that of inhibiting reaction upon stimulation, i.e. of checking our natural and instinctive tendencies to act, until we have reflected what precisely it is we are dealing with. To determine this latter point, we have developed the habit of *analysis*, i.e. of breaking up the confused complex of presentations into 'things' and their 'attributes', which are referred to and 'identified' with former similar experiences, and expressed in judgments as to what the situation 'really is'. This enables us to rearrange the presented connexions of attributions, and the whole reasoning process finds its natural issue and test in an action which modifies and beneficially innovates upon the original habit of reaction.

§5. In other words, thinking or judging is one of the habits that make up man's 'reason', and thinking or judging is a highly artificial and arbitrary manipulation of experience. The 'rational' connexion of events and the 'rational' interpretation of experiences are very far removed from our immediate data, and arrived at only by complicated processes of thought. Now, thinking involves essentially the use of concepts, and depends ultimately upon a number of principles (identity, contradiction, etc.), which have long been regarded as fundamental 'axioms', but which reveal themselves as *postulates* to a voluntarist theory of knowledge which tries to understand them.

Now, a postulate is not a self-evident 'necessary' truth—it ceases to be necessary so soon as the purpose which called it into being is renounced. Neither is it a passively received imprint of experience. It is an assumption, which no doubt experience has suggested to an *actively inquiring* mind, but which is not, and cannot be, proved until after it has been assumed, and is often assumed because we desire it, in the teeth of nearly all the apparent 'facts'. It is therefore a product of our volitional activity, and initially its validity is uncertain. It is established *ex post facto* by the experience of its practical success. In other words, it is validated in just the same way as are the other habits that make up our 'reason'. In so far as, therefore, reasoning rests on postulates, and postulates are unproved and open to doubt at the outset, our attitude in adhering to them implies 'faith', i.e. a belief in a 'verification' yet to come. Must we not say, then, that at the very roots of 'reason' we must recognize an element of 'faith'? And similarly it would seem that as the fundamental truths of the sciences are attained in the same way, they all must presuppose faith, in a twofold manner—(1) as making use of reasoning, (2) as resting upon the specific postulates of each science.

§6. That the principle of faith is commonly conceived very variably and with great vagueness has already been admitted, though its critics seem unfairly to incline towards the schoolboy's definition that it is 'believing a

thing when you know it's not true'. Even this definition would not be wholly indefensible, if it were only written 'believing when you know it's not *true*', and if thereby proper attention were drawn to the fact that a belief sustained by faith still stands in need of verification to become fully 'true'. On the whole, however, it would seem preferable to define it as the mental attitude which, for purposes of action, is willing to take upon trust valuable and desirable beliefs, *before* they have been proved 'true', but in the hope that this attitude may promote their *verification*. About this definition it is to be noted (1) that it renders faith pre-eminently an attitude of will, an affair of the whole personality and not of the (abstract) intellect; (2) that it is expressly concerned with values, and that the worthless and unimportant is not fitted to evoke our faith; (3) that it involves risk, real stakes, and serious dangers, and is emphatically not a game that can be played in a casual and half-hearted way; (4) that a reference to verification is essential to it, and that therefore it is as little to be identified with, as to be divorced from, knowledge. Now, verification must come about by the results of its practical working, by presuming the 'truth' of our faith and by acting on its postulates; whence it would appear that those theologians were right who contended that real faith must justify itself by works. On the other hand, we might anticipate that spurious forms of faith would fall short in one or more of these respects, and so account for the confusion into which the subject has drifted.

§7. Such, then, being the nature of the faith which is said to envelop and sustain reason, and to engender knowledge, can it be fairly charged with forming a principle of unbridled individualism which abrogates all distinctions between subjective fancy and objective reality? Nothing surely could be further from the truth. At first, no doubt, it looks as though to recognize the psychological necessity and logical value of the will to believe opened the door to a limitless host of individual postulates. But the freedom to believe what we will is so checked by the consciousness of the responsibility and risk attaching to our choice, that this part of the doctrine becomes little more than a device for securing an open field and a fair trial to every relevant possibility. Furthermore, all such subjective preferences have to submit to a severe sifting in consequence of the requirement that our postulates must stand the test of practical working, before their claim to truth can be admitted. Whatever our faith, it must be confirmed by works, and so prove itself to be objectively valid.

Alike, therefore, whether it is applied to knowledge or to faith, the pragmatic test is a severe one. It allows, indeed, the widest liberty to experiment; but it inexorably judges such experiments by the value of their actual achievements, and sternly withholds its sanction from insincere phrasemongering, from ineffectual aspiration, from unworkable concep-

tions, from verbal quibblings and dead formulas. Throughout the intellectual world the pedantry of the past has heaped up so much rubbish which the application of this pragmatic test would clear away, that it is not always easy to repress a suspicion that much of the philosophic alarm at the consequences of applying our test may have been inspired, more or less unconsciously, by an unavowed dread lest it should insist on pensioning off some of the more effete veterans among philosophic traditions.

For really the pragmatic value of much that passes for philosophy is by no means easy to discern. Metaphysical systems, for instance, hardly ever seem to possess more than individual value. They satisfy their inventors, and afford congenial occupation to their critics. But they have hitherto shown no capacity to achieve a more general validity or to intervene effectively in the conduct of life. Again, it is inevitable that the pragmatic inquiry as to what difference their truth or falsehood can be supposed to make should be raised concerning many metaphysical propositions, such as that the universe is 'one' or 'perfect', or that truth is 'eternal', or that 'substance' is immutable, which, in so far as they are not taken as merely verbal (and this is all they usually profess to be when criticized), seem only very distantly and doubtfully connected with life. Their *prestige*, therefore, is seriously imperilled.

Now, similar dogmas abound in religion, and are not wholly absent even from the sciences. But their occurrence is outbalanced by that of assertions which carry practical consequences in the most direct and vital way. Hence the pragmatic importance and value of science and religion can hardly be contested. And as tested by their material results in the one case and by their spiritual results in the other, they both indisputably 'work'. It is inevitable, therefore, that we should regard them as resting on conceptions which are broadly 'true', or 'true' at all events until superseded by something truer. They have nothing, consequently, to fear from our method of criticism: if anything, its application may be expected to invigorate their pursuit, and to relieve them of the burden of non-functional superfluities with which an officious formalism has encumbered them.

Selection, then, of the valuable among a plurality of alternatives is essential to the life and progress of religious, as of secular, truth. Truth is not *merely* 'what each man troweth', but (in its fulness) also what has stood its tests and justified our trust.

§8. But experience would seem to show that (at least while the winnowing process is still going on) the results of this testing are not so decisive as to eliminate all the competitors but one. Over an extensive range of subjects the most various opinions appear tenable, and are success fully maintained. But why should this astonish us? For (1) what right have we to expect final results from an incomplete process? (2) What right have we

to assume that even ultimate 'truth' must be one and the same for all? The assumption is no doubt convenient, and in a rough and ready way it works; but does it do full justice to the variety of men and things? Is the 'sameness' we assume ever really more than agreement for practical purposes, and do we ever really crave for more than this? And provided we achieve this, why should not the 'truth', too, prove more subtly flexible, and adjust itself to the differences of individual experience, and result in an agreement to differ and to respect our various idiosyncrasies? (3) It is difficult to see why a phenomenon, which is common in the sciences and normal in philosophy, without exciting indignation, should be regarded as inadmissible in the religious sphere. It is a normal feature in the progress of a science that its 'facts' should be established by engendering a multitude of interpretations, none of which are capable, usually, of covering them completely, and none so clearly 'false' as to be dismissible without a qualm. Why, then, should we be alarmed to find that the growth of religious truth proceeds with an analogous exuberance? (4) Anyhow, whether we like or dislike the human habit of entertaining divergent beliefs, the plurality of the opinions which are held to be 'true' is an important fact, and forms one of the data which no adequate theory of knowledge can afford to overlook.

§9. It is useless, therefore, to close our eyes to the fact that faith is essentially a personal affair, an adventure, if you please, which originates in individual options, in choices on which men set their hearts and stake their lives. If these assumptions prosper, and if so by faith we live, then it may come about that by faith we may also know. For it is the essential basis of the cognitive procedure in science no less than in religion that we must start from assumptions which we have not proved, which we cannot prove, and which can only be 'verified' after we have trusted them and pledged ourselves to look upon the facts with eyes which our beliefs have fortunately biassed. Of this procedure the belief in a causal connexion of events, the belief which all natural science presupposes and works on, is perhaps the simplest example. For no evidence will go to prove it in the least degree until the belief has boldly been assumed. Moreover, as we have argued (in Essays ii., iii., and vi.), to abstract from the personal side of knowing is really impossible. Science also, properly understood, does not depersonalize herself. She too takes risks and ventures herself on postulates, hypotheses, and analogies, which seem wild, until they are tamed to our service and confirmed in their allegiance. She too must end by saying *Credo ut intelligam*. And she does this because she must. For, as Prof. Dewey has admirably shown,[4] *all values and meanings rest upon beliefs*, and "we cannot preserve significance and decline the personal attitude in which it is inscribed and operative." And the failure of intellectualist philosophy to justify science and to understand 'how knowledge is possible', we have seen

to be merely the involuntary consequence of its mistaken refusal to admit the reality and necessity of faith.

I find it hard, therefore, to understand why a religious assumption, such as, e.g., the existence of a 'God', should require a different and austerer mode of proof, or why the theologian should be debarred from a procedure which is always reputable, and sometimes heroic, in a man of science.

We start, then, always from the postulates of faith, and transmute them, slowly, into the axioms of reason. The presuppositions of scientific knowledge and religious faith are the same. So, too, is the mode of verification by experience. The assumptions which work, i.e. which approve themselves by ministering to human interests, purposes, and objects of desire, are 'verified' and accepted as 'true'. So far there is no difference. But we now come to the most difficult part of our inquiry, viz., that of applying our general doctrine to the religious sphere, and of accounting for the different complexion of science and religion. For that there exists a marked difference here will hardly be denied, nor that it (if anything) will account for the current antithesis of faith and reason. It must be, in other words, a difference in the treatment of the same principles which produces the difference in the results.

§10. Now, it is fairly easy to see that certain differences in treatment are necessarily conditioned by differences in the subjects in which the verification of our postulates takes place. In ordinary life we deal directly with an 'external world' perceived through the senses; in science with the same a little less directly: in either case our hypotheses appeal to some overt, visible, and palpable fact, by the observation of which they are adequately verified. But the data of the religious consciousness are mainly experiences of a more inward, spiritual, personal sort, and it is obvious that they can hardly receive the same sort of verification. The religious postulates can hardly be verified by a direct appeal to sense, we think; and even if theophanies occurred, they would not nowadays be regarded as adequate proofs of the existence of God.

But this difference at once gives rise to a difficulty. The opinion of the great majority of mankind is still so instinctively averse from introspection, that it is not yet willing to treat the psychical facts of inward experience as facts just as rightfully and in as real a way as the observations of the senses. It does not recognize the reality and power of *beliefs*. It does not see that "beliefs are themselves real without discount," "as metaphysically real as anything else can ever be," and that "belief, sheer, direct, unmitigated, personal belief," can act on reality "by modifying and shaping the reality of other real things."[5] And because it has not understood the reality of beliefs as integral constituents of the world of human experience, and their potency as the motive forces which transform it, it has disabled itself from really understanding our world.

But it has disabled itself more seriously from understanding the dynamics of the religious consciousness. It rules out as irrelevant a large and essential part of the evidence on which the religious consciousness has every where instinctively relied. It hesitates to admit the historic testimony to the 'truth' of a religious synthesis which comes from the experience of its working through the ages, even though it may not, like the old rationalism, dismiss it outright as unworthy of consideration. It suspects or disallows many of the verifications to which the religious consciousness appeals. And this is manifestly quite unfair. The psychological evidence is relevant, because in the end there is a psychological side to all evidence, which has been overlooked. The historical appeal is relevant, because in the end all evidence is historical, and the truth of science also rests on the record of its services. The controversy, therefore, about the logical value of religious experience will have henceforth to be conducted with considerably expanded notions of what evidence is relevant. Nor must we be more severe on religion than on science. But it is plain that we are. We ought not to be more suspicious of the religious than of the many scientific theories which are not capable of direct verification by sense-perception. But even though the ether, e.g., is an assumption which no perception can ever verify, it is yet, in scientific theory, rendered so continuous with what is capable of perceptual verification that the discrepancy is hardly noticed. The system of religious truths is much less closely knit; the connexion of the postulates with our spiritual needs and their fulfilling experiences is much less obvious; the methods and possibilities of spiritual experiment are much less clearly ascertained.

The reason, no doubt, partly is that in the religious sphere the conceptions for which the support of faith is invoked are much more vaguely outlined. It would be a matter of no slight difficulty to define the conception of religion itself, so as to include everything that was essential, and to exclude everything that was not. And it would not be hard to show that at the very core of the religious sentiment there linger survivals of the fears and terrors with which primitive man was inspired by the spectacle of an uncomprehended universe:

Again, consider so central a conception of religion as, e.g., 'God'. It is so vaguely and ambiguously conceived that within the same religion, nay, within the same Church, the word may stand for anything, from the cosmic principle of the most vaporous pantheism to a near neighbour of the most anthropomorphic polytheism. And it is obvious that while this is so, no completely coherent or 'rational' account can be given of a term whose meanings extend over almost the whole gamut of philosophic possibilities. But it is also obvious that there is no intrinsic reason for this state of things, and that theologians could, if they wished, assign one sufficiently definite

meaning to the word, and then devise other terms as vehicles for the other meanings. It may be noted, as a happy foretaste of such a more reasonable procedure, that already philosophers of various schools are beginning to distinguish between the conceptions of 'God' and of 'the Absolute', though it is clear to me that the latter 'conception' is still too vague and will in its turn have to be either abolished or relegated to a merely honorary position.

§11. It must be admitted, thirdly, that a widespread distrust of faith has been, not unnaturally, provoked by the extensive misuse of the principle in its religious signification. Faith has become the generic term for whatever religious phenomena co-existed with an absence of knowledge. Under this heading we may notice the following spurious forms of faith:—(1) Faith may become a euphemism for unwillingness to think, or, at any rate, for absence of thought. In this sense faith is the favourite offspring of intellectual indolence. It is chiefly cherished as the source of a comfortable feeling that everything is all right, and that we need not trouble our heads about it further. If we 'have faith' of this kind, no further exertion is needed to sustain our spiritual life; it is the easiest and cheapest way of limiting and shutting off the spiritual perspective. (2) It is not uncommon to prefer faith to knowledge because of its uncertainty. The certainty about matters of knowledge is cold and cramping: the possibilities of faith are gloriously elastic. (3) Our fears for the future, our cowardly shrinkings from the responsibilities and labours of too great a destiny, nay, our very despair of knowledge itself, may all assume the garb of faith, and masquerade as such. (4) 'Faith' may mean merely a disingenuous disavowal of a failure to know, enabling us to retain dishonestly what we have not known (or sought) to gain by valid means. To all these spurious forms of faith, of course, our Humanism can furnish no support, though it is alert to note the important part they play (and especially the first) throughout our mental life.

The fifth form of faith is not so much fraudulent as incomplete; its fallacy consists in allowing itself to be stopped short of works, and to renounce the search for verification. This is the special temptation of the robuster forms of faith: if our faith is very strong it produces an assurance to which, psychologically, no more could be added. Why, then, demand knowledge as well? Does not this evince an unworthy distrust of faith at the very time when faith has shown its power? To which it may be replied that we also can and must distinguish psychological assurance from logical proof, even though the latter must induce the former, and the former must lay claim to logical value as it grows more nearly universal. The difference lies in the greater psychological communicability of the 'logical' assurances and their wider range of influence. At first sight emotional exhortations (sermons, etc.) may seem to produce far intenser and more assured beliefs than calmer reasonings. But they do not appeal so widely nor last so well,

and even though it is hazardous to assume that 'logical' cogency is universal,[6] it is certainly, on the whole, of greater pragmatic value.

Moreover, the motives of an unreasoning faith are easily misread; the faith which is strong enough to feel no need of further proof is interpreted as too weak to dare to aspire to it. And so a properly enlightened faith should yield the strongest impetus to knowledge: the stronger it feels itself to be, the more boldly and eagerly should it seek, the more confidently should it anticipate, the more probably should it attain, the verificatory experiences that recompense its efforts.

§12. It must be admitted for these reasons that the mistaken uses of the principle of faith have retarded the intellectual development of the religious view of life. It has lagged so far behind the scientific in its formal development that theologians might often with advantage take lessons from the scientists in the proper use of faith. But intrinsically the religious postulates are not in-susceptible of verification, nor are religious 'evidences' incapable of standing the pragmatic test of truth. And some verification in some respects many of these postulates and much of this evidence may, of course, be fairly said to have received. The question how far such verification has gone is, in strict logic, the question as to the sphere of religious 'truth'. The question as to how much further verification should be carried, and with what prospects, is strictly the question of the sphere of the claims to truth which rest as yet only upon faith.

§13. To attempt to determine with scientific precision what amount of established truth must be conceded to religion as it stands, and what claims to truth should be regarded as reasonable and valuable, and what not, is a task which probably exceeds the powers, as it certainly transcends the functions, of the mere philosopher. It would in any case be fantastic, and probably illusory, to expect any philosophy to deduce a priori and in so many words the special doctrines of any religion which bases its claims on historic revelation, and *may*, by its working, be able to establish them. For what would be the need and the use of revelation if it added nothing to what we might have discovered for ourselves? Moreover, in the present condition of the religious evidence, any attempt to evaluate it could only claim subjective and personal interest. No two philosophers probably would evaluate it just in the same way and with the same results.

It seems better, therefore, to make only very general observations, and to draw only general conclusions. As regards the general psychology of religion, it is clear (1) that all our human methods of grasping and remoulding our experience are fundamentally one. (2) It is clear that the religious attitude towards the facts, or seeming facts, of life is in general valid. (3) It is clear that this attitude has imperishable foundations in the psychological nature of the human soul. (4) It is clear that the pragmatic

method is able to discriminate rigorously between valid and invalid uses of faith, and offers sufficient guarantees, on the one hand, against the wanderings of individual caprice, and, on the other, against the narrowness of a doctrinairism which would confine our postulates to a single type—those of the order falsely called 'mechanical'.[7] It can show that it is not 'faith' to despise the work of 'reason', nor 'reason' to decline the aid of 'faith'; and that the field of experience is so wide and rough that we need never be ashamed to import religion into its cultivation in order to perfect the fruits of human life.

As regards the concrete religions themselves, it is clear (1) that all religions may profit by the more sympathetic attitude of Humanism towards the religious endowment of human nature, and so towards their evidences and methods. And this for them is a gain not to be despised. For it invalidates the current rationalistic attacks, and secures religions against the ordinary 'dialectical' refutations. It gives them, moreover, a chance of proving their truth in their own appropriate way. It is clear (2) that all religions work pragmatically to a greater or less extent. And this in spite of what seem, theoretically, the greatest difficulties. The obvious explanation is that these 'theoretical' difficulties are really unimportant, because they are either *non-functional* or *pragmatically* equivalents, and that the really functional parts of all religions will be found to be practically identical. It follows (3) that all religions will be greatly benefited and strengthened by getting rid of their non-functional accretions and appendages. These constitute what may, perhaps, without grave injustice be called the *theological* side of religion; and it nearly always does more harm than good. For even where 'theological' systems are not merely products of professional pedantry, and their 'rationality' is not illusory, they absorb too much energy better devoted to the more truly religious functions. The most striking and familiar illustration of this is afforded by our own Christianity, an essentially human and thoroughly pragmatic religion, hampered throughout its history, and at times almost strangled, by an alien theology, based on the intellectualistic speculations of Greek philosophers. Fortunately the Greek metaphysic embodied (mainly) in the 'Athanasian' creed is too obscure to have ever been really functional; its chief mischief has always been to give theological support to 'philosophic' criticisms, which, by identifying God with 'the One', have aimed at eliminating the human element from the Christian religion.[8] As against all such attempts, however, we must hold fast to the principle that the truest religion is that which issues in and fosters the best life.

NOTES

1. I am using the term strictly as = 'a belief in the all-sufficiency of reason', and not in its popular sense as = 'criticism of religion'. A rationalist in the strict sense may, of course, be religious, and *per contra* a voluntarist, or a sensationalist, may be a rationalist in the popular sense.

2. Cp. Essays ii., iii., and vi.

3. Of course, the discrepant character of mathematical truth as 'self-evident' and 'independent' of our arbitrament, is only apparent. It arises mainly from the ease with which its fundamental postulates are made and rendered familiar, from the general agreement about their sphere of application, from the complete success of their practical working, and from the obvious coherence of truths which are tested in whole systems rather than individually. Cp. *Humanism*, pp. 91, 92; and *Personal Idealism*, pp. 111-117, and 70 n.

4. In his important paper on 'Beliefs and Existences' in *The Influence of Darwin on Philosophy.*

5. Prof. Dewey in l.c. pp. 192, 188, 187.

6. Cp. Essay xii. §8.

7. Strictly interpreted, the word *confirms* the Humanist position which it is so often used to exclude. For a 'mechanism' is, properly, a *device*—a means to effect a purpose. And, in point of fact, it is as a means to ordering our experience that 'mechanical' conceptions are in use. To abstract from this teleological function of all 'mechanism' therefore, is to falsify the metaphor: a device of nobody's, for no purpose, is a means that has no meaning.

8. Cp. Prof. Dewey, l.c. pp. 178-80.

20

PRAGMATISM, HUMANISM, AND RELIGION

Of the three very big subjects of my title I feel competent to deal only with two. I can deal with Pragmatism and Humanism, because I made one of them myself, and had a hand and a sword in fashioning the other. On Religion I can pretend to speak with no authority whatever; but it is a subject on which even bores can contrive to be interesting, if they are sincere.

§1

Nothing is easier to define than Pragmatism; few things also are more futile. Because experience shows that its critics are so chock-full of their own prejudices, and the mere suspicion of pragmatism so violently stirs their emotions that they never listen to what one has to say. The Archangel of Lucidity himself, whose name I have forgotten, could not make them understand. You, however, are not prejudiced, I will assume, but if you have not studied the subject the danger is that you will not appreciate the enormous scope of what looks like a very simple definition. The official definition of Pragmatism, that the truth of any assertion depends on its conse-

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Must Philosophers Disagree? And Other Essays in Popular Philosophy (London and New York: Macmillan, 1934), pp. 306–319.

quences, looks innocent enough. It seems a bit vague, and one wants to know what consequences are meant, and that is all. But you would hardly suspect that its real meaning is that all knowledge is empirical, and that no sort of Formal Logic is desirous or capable of dealing with real truth at all.[1] To bring out this meaning I should have to dive deeper into technicalities and to show you how Formal Logic everywhere disintegrates into nonsense, because it has uncritically taken 'truth' in a sense in which it does *not* exclude falsity. And the reason for this mistake, again, is simply this: that as a matter of course and of form, every assertion verbally claims to be true, whether it is really true or really false. If, therefore, you restrict your truth-seeking to this formal claim, and do not inquire what makes assertions really true, you get a formal sense of truth, in which 'true' includes 'false'. It is as a protest against this self-frustrating procedure that Pragmatism insists that the consequences of an assertion, and not its mere form, decide whether it is really true. All this of course needs a little reflexion, and you may not see it at first. Hardly any philosophers above twenty-five saw it at first, and most of the old authorities in philosophy have died without seeing it, just as most of the great authorities in biology died protesting against Darwinism, without ever seeing its point.

You, however, can probably understand that this rejection of Formal Logic, root and branch, is a revolutionary achievement of human thought. It means the dissipation of an enormous cloud of illusion, which has befogged the human reason for thousands of years, blocked the advance of knowledge, and inflicted untold miseries upon its victims. During the whole of its reign Formal Logic has shown itself incapable, not only of improving the processes of human thinking, but even of understanding how men reasoned in ordinary life and in science. No wonder that logicians do not, as a class, reason any better than other people, and that the study of Logic has been quite impotent to diminish the amount of bad reasoning in the world. Logic has been merely a source of pride in pedants and an instrument of educational torture. I attribute the insensibility of philosophers to scientific reasoning largely to the fact that they have never dared to shake off this incubus. In short, I know of only one thing which has made more mischief than the usurpation by Formal Logic of the study of concrete thinking, and that is the false theory of truth which makes intolerance a duty and toleration a despicable act of cowardice.

§2

It is this second bogy which Humanism sets itself to exorcize.[2] We may define Humanism as the systematic and methodical working out of the per-

ception that every thought is a personal act of which some thinker is the author and for which he may be held responsible. This perception rests on the undeniable fact that it is a psychological impossibility for any thought to be born into the world except through the ministration of some human mind, by commending itself to the total personality of some thinker, and by at least seeming to satisfy some purpose. Why do you suppose that any one ever says anything? Because, at the time, he judges it good: because it seems to him better than anything else he could say. But for him, therefore, that truth would remain unconceived and unuttered. It is a personal response to the situation in which he finds himself. Thus it follows that all truth-seeking is personal. And must not truth-finding be so likewise, if so be that we find it?

Now if truth is necessarily personal, it cannot really be dehumanized, and if a philosophy or a science professes to dehumanize it, it must either be expressing abstractly some other truth which really has a human side, or else be meaningless. In all real knowing the personal equation always plays a part. You may dislike this fact, or welcome it; but you cannot deny it, unless you are bent on giving a stupendous example of personal prejudice yourself. And then you signally prove the very point you were trying to contest.

This discovery of the personal background to all assertion as such, means more than a radical reform of Logic. It means an end to every form of logical bullying and intolerance. The phantom of absolute truth, which every bigot of every kind, on every side of every question, always claimed to possess, and never could substantiate, is dissipated in the brilliance of a new day. And with it the atrocities, for which it supplied the theoretic justification, are bound gradually to pass away. In its stead we must learn to respect the human truths which respond to the personalities of human thinkers. The claim to absoluteness being gone, we need no longer hesitate to admit that, relatively to different situations, different beliefs may have value and be judged true. For men are different: they are differently situated and differently trained; they have had and have different experiences. Hence they naturally take different views, and it is no use expecting them to agree—at first. Nor is it a bad thing that they don't, because *so* the chances are increased that everything that is of value will be judged true and advocated by some one. Our best policy, therefore, is to recognize and welcome a situation which has always existed, without bitterness and without quarrelling. Thus man is liberated from the burdensome claim to infallibility, and the demon of intolerance dies with the delusion which nourished him.

§3

We now approach Religion, with mitigated hopes and fears. If we have sincerely renounced the hope of enclosing the infinite fulgurations of spiritual activity within the narrow limits of a rigid formula, which some scientist's, philosopher's, or theologian's little mind has laboriously compiled, we are freed also from the paralysing fear that religious truth may fail to respond to the needs of any human soul. Religious truths are *strengthened* by being found to conform to the type of all truth. Like all other truths they must fulfil a purpose, satisfy a need, and be verified experimentally. The religious question for each of us becomes—"In what belief shall I find the overbelief, the supplementation and transfiguration of my workaday beliefs, which will interpret my experience for me and set at rest my soul?" Of course, this is a question every one must answer for himself. But it has become a question every one has a right to ask and a right to answer, and has ceased to be a question which is unanswerable in itself.

All that a spiritual adviser, therefore, can or need do for us is to draw our attention to a number of points which may help toward working out our own salvation.

§4

For my own part I should like to raise a few relevant questions. (1) How should we conceive Religion? (2) How should we try to find a satisfactory basis for Religion? (3) What bearing should Humanism have on the Religious Problem?

(1) Religion is clearly an extremely difficult thing to define, or even to describe. For it is so evidently a much bigger and deeper thing than any creed and any theology whatsoever. It is rooted in the human heart, and forms one of the most important of our psychological instincts. It must therefore be conceived very broadly, as essentially a demand for something that will respond to our spiritual needs and cravings. This demand in its turn, though as such subjective, has an objective source: it is evoked by the nature of experience. Our experience is such that religious cravings are widespread and vital, and probably will always continue to be almost universal. So far as I can make out indeed only three classes of persons can be said to be devoid of them, and therefore to be inherently irreligious by nature, whatever they may seem to be by convention, to wit: (1) extreme pessimists, (2) extreme optimists, because neither doctrine leaves one with anything to hope for, and (3) the utterly unimaginative, because they can imagine nothing beyond that which actually occurs in their experience.

Whoever, on the other hand, has an ideal, and can conceive a better than his actual experience, is fundamentally religious. Fundamental religion, therefore, is primarily a systematic refusal to accept our inherited world, such as our brute and savage ancestors have actually made it for us, as an adequate sample and measure of true reality. This refusal drives us on secondarily to a belief in the possibility of a higher and better order of things to which we may attain.

Most of us, then, have religious cravings and are potentially religious animals, seeking for congenial provender, wherewith to feed our souls. But our cravings are somewhat various, and it is not easy for one and the same religion to satisfy them all. Most men, therefore, in their practice acknowledge a plurality of religions, and aim at a plurality of ideals. Even construing religion more narrowly, some of us have many more religious demands to make upon the universe than others. If we want Help, Justice, and most of all, Mercy, we shall demand a Personal God who cares for his creatures, a personal Saviour to sympathize and commune with us, a future life, and perhaps ultimately a heaven, though tastes in heavens seem to be very various, and some have no taste for them at all. Others demand in addition a definite organization of spiritual interests or 'church', with an impressive ritual and a romantic past, and even a beautiful variety of vestments.

Others again are much less exacting. The only thing their spirits crave is an assurance of unity. If you assure them that the universe is one, and that they are part of it, they can dispense with all the rest. The absolutist philosophy which so easily satisfies this demand, *and so far as I can see no other*, may perhaps strike you as making a very tenuous and innutritious sort of religion. But we must not be intolerant, and so far as it goes it is a genuine religion, because, and in so far as, it satisfies a genuine demand. It lays itself open to criticism only when it makes a preposterous attempt to narrow down religion to this single form. If this pretension is advanced in the name of philosophy, we should send this so-called philosophy away to study a little elementary psychology and a few of the elementary facts of human life, in order that it may appreciate the richness and variety of human nature. Let us conceive religion, then, as the soul's aspiration towards an ideal wherewith to rectify and transfigure the actual.

§5

(2) You may have gathered from what I have said how I think a satisfactory basis for religion should be conceived. The fountain-head of religion is situated in the human soul, and helps to float the frail vessels that hurry us down the stream of time, until we pass beyond the narrow range of human

vision. No other, no further, basis is required at first; indeed we do not strictly need a *basis* at all. The metaphor of a basis is thoroughly objectionable. It is only a *stationary* religion that needs a basis, i.e. something to rest on. And a stationary religion is one that has ceased to move with the times, to show a capacity for spiritual growth. It is a dead religion, or at least a dying one, and no emotional 'revival' will revive it.

Let us conceive *theology*, therefore, by all means as possessed of a basis, as resting immutably on fixed foundations, as safely bestowed in the glass cases of museums of antiquities, as from time to time reverently taken out and exhibited by their curators to the curiosity of their pupils.

But let us not confound *religion* with *theology*. Theology has mostly been a fruit of priestly leisure rather than of spiritual experience. At its best, it only codifies the beliefs which spiritual experience has spontaneously evolved; at its worst, it swells into a parasitic vampire which sucks the life-blood from Religion. Genuine Religion cannot be stereotyped or fossilized, as theology always tends to be. It lives in the hearts of men; and if it lives at all, it moves, and its progress cannot be stopped. It must keep in touch with life, and enter into it. And so it must grow and develop, and be transformed by the experience of life, and in its turn transform it.

§6

(3) But how does all this bear on Humanism? Why, not at all, directly. Strictly and properly conceived, Humanism is not a religion, nor even a philosophy of religion, though it has a human interest in religion as a big fact of human nature. Nor is Humanism a metaphysic. It is something very much humbler and simpler. It is merely a tardy recognition on the part of a few philosophers, who have given up gazing at the clouds and divining the future thereby a priori, and turned their attention to the humdrum facts of life on earth, of the way in which men have at all times acquired knowledge. In itself it is merely a reform of logic or theory of knowledge. It applies to all knowledge, and therefore if there is such a thing as religious experience and a knowledge derived from it, we can confidently predict that it too will conform to the humanist analysis of knowledge.

This is to say that religious phenomena also will nowhere exhibit the operation of purely rational principles: they will everywhere be inspired and excited by desires, cravings, interests, emotions, purposes. Religious truths also will begin their careers as postulates, and will need, and receive, verification by experience. And they will attest their truth by the manner of their working, by the control they exercise over the actions and passions of men, rather than by their success in evolving verbally invulnerable for-

mulas to repel the assaults of armchair dialecticians. In short, Humanism is so far from founding a religion that it will rather be true that religious phenomena will supply no small part of the evidence to which the humanist theory makes appeal.

Shall we conclude, then, that Humanism will make no difference to religion? No; it will make differences which in some points may be very important. I will mention three of these.

§7

(1) Humanism will make a difference in the logical status of the religious attitude towards life. It will make men more conscious, and *therefore critical*, of their Will to Believe. The natural man everywhere begins by believing and disbelieving what he likes. Whatever strikes him as impressive and insistent, as aesthetically pleasing, as convenient, he accepts as self-evidently true, forthwith. He is the victim of first impressions. What ever he dislikes he closes his eyes to, ignores, forgets, and disbelieves. So smooth and unobstructed is the passage, in most minds, from the dim consciousness of a desire to a confident affirmation that its aim has been attained, that they are quite unaware of the existence of prejudices that determine their views on any question that interests them. But whenever the psychologist studies the actual reasonings of men he has always the same report to make. In politics, in religion, in science alike, men observe what they come prepared to see, confirm what they already believed, and overlook what does not fit in with their preconceptions. But the worst sins have probably been committed in philosophy, until recently the least self-critical of the sciences. Metaphysics are simply concretions of an individual's will to believe; in every case the conclusions are reached first, and the reasons invented afterwards. Every metaphysician believes in whatever he wishes to believe, and naïvely wishes every one else to believe with him. Why? Because his truth is self-evident to him, and he admits its claim to be self-proving. Now the 'self-evident' is that for which there is no *other* evidence. To believe in it is to be willing to dispense with extraneous tests of truth, and to hanker after a priori truths. A priori truths are truths conceived to prove themselves simply by the statement of their claim.

Now the whole of this mass of habit the Pragmatic Method challenges and puts on its trial. It insists that every truth, whatever its origin and whatever its claim, shall be tested by the *value* of its consequences. It will not accept a mere will to believe as a sufficient authentication of any dogma, philosophic or religious. If a religious doctrine has bad consequences, it will suggest that it may be inspired by the devil rather than the deity; if a

philosophic doctrine has bad consequences, it will remark that psychological apriority is quite compatible with an origin in insane delusion. For the first time in its history philosophy is summoned to have an audit of its accounts; for the first time in its long career the Will to Believe has been found out.

But there is granted to us scientific compensation in the Right to Believe, which is the correlative of the duty to test beliefs. "The Right to Believe at our own risk any hypothesis that is live," as James calls it,[3] gives to the religious man the right to explore his subject by suitable hypotheses which are adopted and acted on before they are proved, and proved by being acted on. This is the right which has long been exercised by science, and has ministered so greatly to its progress.

The effect of this is to put the religious attitude toward the world logically on a par with the scientific, by proving the essential identity of their methods. What could be better calculated to restore its self-respect to Religion?

§8

(2) Humanism cannot but involve a revolution in apologetic. It finds a great common measure for scientific and religious fact in psychology. It finds in the relativity of all truth to the purpose of the inquiry a great solvent of antagonisms, whereby it dissolves the stolid solidity of the old conception of scientific fact which was slowly sapping the loftiest citadels of faith. It dissolves also the solidarity of the conceptions of fact in the different sciences, and so makes room for the recognition of the religious experiences as scientific facts. For in ultimate analysis it appears that each science adopts whatever notion of fact is consonant with its purpose, and ignores the rest. The facts of one science are not facts for another; the facts of ordinary life are not facts at all for any science—but only raw material worked up differently for their different purposes. Take, e.g., a common experience, say of red. For the science of physics the real 'fact' is not red: it is an ether vibration of a certain 'wave-length' or 'frequency'. For physiology it is a chemical decomposition in the retina. For psychology it is a 'simple sensation'. But what have these formulas in common, either with each other or with the crude experience which takes an object as inherently red?

The only common ground which all these divergent conceptions have is their relation to human purposes and their relativity to human experience. But on this ground they can meet not only each other's elaborations of crude fact but also those effected by the religious consciousness. Different as are the purposes, postulates, and verifications of the religious interpretation of experience, they do not differ in this fundamental respect

from the interpretations of the sciences. All ultimately aim at alleviating the crushing burden of this unintelligible world. All strive to make it intelligible by making it inhabitable. All are justified in what they do by their success, and would eliminate themselves by failing in their aim. Science, therefore, to be humanly possible, must take account not only of the motions of bodies, but also of the emotions of souls. If its last word were pessimism, and of Religion optimism, it could safely be predicted that scientific 'truth' must succumb to religious. For it would eliminate its votaries, and its suicidal 'truths' would perish with them. The 'truth' that kills you, if you believe it, kills itself. Conversely, complete other-worldliness would be fatal to religions. They must be some earthly good; they must condescend to save bodies as well as souls.

§9

(3) It always makes a difference if we do consciously and with insight into its meaning what before we had done blindly and instinctively.

And so I do not doubt that a far-reaching change will come over the spirit of our religious dreams, when they are regarded in the kindly light of Humanism. This change will affect religion as such, i.e. all forms of religion. For to the humanist eye the really functional parts of all religions are so similar as to be practically identifiable, while the differences between them arise chiefly from the enervating excrescences of an intellectualistic theology, almost wholly derived from Greek philosophy and devoid of reference to religious experience. Humanism then will encourage us to trust our religious instincts, embolden us to try, more freely, spiritual experiments. It will disparage mere ritual, and dogma and formalism, mere theological dialectics, if they lead to no practical consequences and have little or no value for life. It will shift the centre of religious gravity from theory to practice. It will strengthen the religions in proportion as they are functionally efficient, and enable all of them to slough off their non-functional obstructions, and the obsolescent appendages with which dead superstition and undying pedantry have encumbered, and almost stifled, them. And it will subscribe with all its heart to the admonition, "By their fruits ye shall know them, whether they be of God."

And so instead of vying with each other in constructing subtle traps for the ignorant and unwary and calling them creeds, or in hunting and splitting dialectical hairs, theologians will learn to contend not with vituperative words but with good works, and to recommend their various answers to the religious question by showing that they really meant, and still mean, something in terms of spiritual experience, and can practically

sustain our spiritual activities. Religions will set themselves to establish their truth, not by doctrines and dogmas, but by confirming and ministering to the good life.

And, to me at least, this way would seem much better and more salutary both for the theologians and for the rest of the world.

§10

But I do not flatter myself that Humanism will prevail in Religion, any more than in philosophy, without a long and bitter struggle. That right thinking depends on right doing, and not vice versa—because we find ourselves committed to life from the day of our birth and long before we can think about it—is a hard saying in itself, and it is not rendered easier for the denizens of a university by the nature of an academic atmosphere. For academic life breeds and selects intellectualists, and these, like most men everywhere, naturally prefer to believe that they and their life are just about as right as possible. It is a popular misconception of pragmatic theories that they relax the rules of truth-seeking in favour of our credulous instincts. But nothing could be more mistaken. That truths must authenticate themselves by their working, i.e. by their actual value, is the severest of all tests, and to it the little faiths of the men of little faith will ever be reluctant to submit.

I venture, however, to hope that by taking our religion practically we shall in the end find ourselves impelled in the direction of substantial agreement far more rapidly than attaching an altogether excessive importance to the vagaries of the individual intellect.

For it should be remembered that the intellect is not the only, nor even the chief, source of social agreement. Biologically speaking, its essential function is to be an instrument of variation producing salutary divergences from habitual modes of behaviour. It is therefore individualistic from the first, and in its higher reaches gets unduly so. When two philosophers meet they never quite agree, unless they are trying to be polite, and generally they quarrel violently. Every man's reason is always up in arms against every other man's, and destroys his reasons. The reason is that each thinker in these higher regions grows into a lonely specialist, who goes on his own way and grows less and less humanly intelligible to his fellows. As William James says in one of his letters, "the philosopher is a lone beast, dwelling in his individual burrow."[4] Intellect, therefore, isolates and estranges; it does not promote agreement. It has utterly failed to produce agreement in religious matters, more utterly even than force. I speak in sorrow not in anger, and in view of the facts of history. No wonder religions have never relied on reasoning alone; the merely intellectual view of religion has

always bred an intractable Rationalism, and rationalism is an exaggeration and caricature of the deeper reason which adjusts our acts to the particulars of life, and so helps to keep us alive.

On the other hand it is on the plane of action and of the feelings and perceptions that subserve the needs of action, that we lead a common life, and can co-operate for all essential purposes. Hence, though we may be as slow to agree theoretically about religion as about the other values of life, we may learn to regard our differences as unessential, as the bad reasons which those who differ from us give for doing the right thing; and practically this suffices.

In conclusion, let me express a hope that even though, being myself a philosopher and full of philosophic perverseness, I have probably not said what I was wanted or expected to say, I may have said enough that is debatable to set the ball of discussion rolling towards the abysses of truth!

NOTES

1. As has been fully shown in my *Formal Logic*.

2. The term is here used in a purely epistemological sense. It was adopted by me, with very little philosophic precedent, in the year 1902, to designate a point of view which emphasized the central position of man and of human enterprise in the theory of knowledge, and was opposed alike to the Naturalism which would not recognize human activity at all, and to the Absolutism which merged (and lost) it in the whole. It was thus descriptive of the great principle of Protagoras that 'Man is the Measure of all things', that is, of all that concerns him and comes within his ken. Since then, however, a *religious* reference has often been given to this term in America. It is used to describe a trend of opinion within the Unitarian Church, which emphasizes the concern of religion with man, and says little or nothing about God. So Humanism is made antithetical to Theism as well as to Absolutism. It will be seen that this development is quite foreign to my thought.

3. *Will to Believe*, p. 29.

4. *Letters*, vol. ii, p. 16.

Part Four

ETHICS AND POLITICS

INTRODUCTION TO PART FOUR

Hugh McDonald

In his early, idealistic period, Schiller's ethics followed the model of perfectionism (*Riddles of the Sphinx*, "Conclusion"). This position may have reflected the influence of T. H. Green, which was dominant in the British academic climate of the time. Green's influence can also be seen on Dewey. Green adapted Aristotle's ethics of perfection of character ("virtue ethics") to contemporaneous idealism, a position that has been characterized as "self-realizationism." Schiller also wrote in this early work of perfection of character and the moral ideal.

At some point, Schiller changed his views, although it is unclear whether his views on ethics changed at the same time as his views on first philosophy, epistemology and logic. More precisely, he modified his views, under the combined influence of William James, the Social Darwinists and the burgeoning movement of value philosophy. No doubt these changes were interconnected, since first philosophy is ethics for Schiller and the basis for the values of metaphysics and logic: respectively, the real and the true. His revaluation of ethics as a first philosophy was bound to affect his view of the theory and content of ethics. Nevertheless, it is an open question whether Schiller's later views were a change in kind or only in emphasis. The title of one of his last essays on ethics, "Eugenics as a Moral

Ideal," incorporates the eugenical content into the framework of an ideal, a reaffirmation of ethical idealism.

The good life is bound up with ends as a goal to be achieved by practical activity and is called the "ethical ideal" by Schiller. This ethical ideal is a goal to be realized by practical activity of humans. Thus Schiller never completely abandoned his early idealism. Ethics always works from the standpoint of some ideal, whatever the content. Ethics reshapes reality to accord with this ideal, perfecting character and realizing the self. However, and also in accord with Lotze's teleological idealism, the ideal is a project or goal of human action, an end. Pragmatic consideration of consequences is thereby requisite.

What Schiller retained from the early period into the late period was his conception of ethics as teleological, specifically as consequentialist. This view could easily be fit into the consequentialist views that united otherwise distinct forms of pragmatism, Peirce's theory of meaning, James's theory of truth and Dewey's instrumentalism. Both "self-realizationism" and pragmatic forms of consequentialism have a basically prospective, melioristic view of the human condition. The perspective of ethics is toward the future, towards consequences and improvement of the situation: it is oriented toward valued goals. Ethical consequentialism is teleological. Human nature consists of certain potentialities that can be refined. Ethics has as its task the creation of good habits, another Aristotelian term that all the pragmatists adopted as their own. Indeed, Peirce applied it to metaphysics. This model could be used equally for the ethics of perfection of character, self-realizationism, or pragmatic holism. Moreover, perfectionism implies the development of virtue in the wide sense of excellence in character, the development of intelligence and talents, and even physical fitness. Schiller believed that perfectionism implied eugenics, a view not foreign to ancient Greek thought, to which he explicitly appealed. Perfection of human character is consistent with eugenical improvement, indeed, required by it.

The other element that Schiller shared with Dewey, and that distinguished pragmatic from idealist ethics, was the vitalist view of values. Both grew up in an era in which the influence of Darwin was fresh, paramount and pervasive. Both read Herbert Spencer, although Dewey broke much more with Spencer's elitist conclusions than Schiller did. What both derived from their encounter with Darwin and incorporated into their thinking was the connection of values with life, that value means value for life. They shared this view with other important thinkers of the period, notably Nietzsche and Bergson. Their value theory, along with their holism, distinguished pragmatic consequentialism from other consequentialist ethical theories, notably hedonistic utilitarianism.

Schiller also defended free will against determinism[1] arguing that our experience of freedom is legitimate and that determinism is a methodological postulate of limited applicability in the sciences that we freely choose, albeit a productive one. Freedom does not mean lack of any motive for action but a choice between conflicting motives where agents choose the seemingly better course of action under the circumstances.

Schiller was a Social Darwinist and an eugenicist. Social Darwinism was a fairly common view in his time (William Graham Sumner, Oliver Wendell Holmes, in some respects Nietzsche). Most of the other pragmatists, Peirce excepted, were more democratic and equalitarian, especially Dewey. Schiller argued that eugenics is anti-egalitarian but not anti-democratic (*Eugenics and Politics*, p. 4). He also argued that eugenics would ultimately benefit society. Like other elitists of the period, he distinguished a "real" from a "sham" nobility, that is, one based on "intrinsic merits," not family background. Since the "aristocratic principle" is not tied to a special form of government, Schiller believes in the separation of politics and society, unlike the totalitarian regimes of the right.

Eugenics was considered a progressive and reformist view at the time, before the Nazis discredited it. Schiller judged the Nazi's racial views "preposterous"[2] and did not consider eugenics a racial theory. Nor was it tied to classes; he argued that the class system often produced degenerate offspring. Rather, it was biological. The decay of civilization, much discussed at the time (Spengler, Toynbee) might be connected with the loss of more valuable traits. Spengler viewed civilization by analogy with organisms, perhaps reflecting the shadow of Darwin's century. Breeding of horses, dogs and other species to improve the stock for certain purposes, such as racing, hunting and tracking, was widely practiced. The argument of the eugenicists was that humans too are a biological species that could be improved by breeding. Schiller argued that the most talented individuals tend not to have children due to the way society is organized: their talent is recognized too late, and the compensations that come to them are thereby insufficient to induce them to have children. The upper classes lack the stimulation to advance, since they already have what they want. Thus the organization of society tends to work against perpetuation of the most talented.

Schiller also spoke of eugenics as an "ideal." For Schiller, eugenics was a realistic insight that some characteristics of individual humans are "superior" to those of their fellows and should be encouraged and preserved. Eugenics as a project was a perfectionist experiment, an outgrowth of the ethics of perfection of character, which was judged ameliorative. However, it involved a shift in emphasis from individual self-realization to the perfection of society. For Schiller, negative eugenics, the elimination of unhealthy genes or stock, is not enough, since it is not a progression or evo-

lution. Schiller believed that "natural selection" had been eliminated in human society and so a substitute mechanism was needed. However, this principle seems to violate his original humanist position that naturalism is inadequate as a guide for human society and knowledge. Eugenics is now under discussion again, after a fifty-year moratorium, due to the possibility of genetic engineering, among other technical developments. Whether it is a wise idea is another story.

Schiller's other political views varied. There is no point in trying to cover up the fact that he had some sort of association with the British Fascists, despite his ridicule of the Nazi's racial theories. He believed that it was an open question, which sort of society would survive, fascist or democratic, and even thought that the era of democracy was at an end. However, he believed that Bolshevism would end in enslaving the species. He believed that eugenics, and thereby the improvement and evolution of society, might require some form of state planning. While he did not actually endorse Mussolini, he did think that Italian Fascism might provide a "harbinger" of a "more intelligent mode of planning." His eugenical outlook inclined him toward this view, since he believed that human society, through such planning, could select for the best as a substitute for natural selection. It should encourage the abler stock to reproduce. Schiller did not think progress was inevitable; progress had to be fought for. Putting such a program as eugenics into practice in a democratic society is not impossible but would be difficult. Ultimately, the advantage of a free society is that it might adopt such a eugenical program voluntarily. Schiller argued that adoption of a eugenical program does not require coercion, only persuasion.

Schiller's eugenical views mark him as an idiosyncratic combination of idealist reformer and pessimist, since he was not hopeful about the prospects for democracy and believed that progress is precarious. He thought that aristocracy was the "natural form of government" where, as in Greece and Rome, great families, which looked to the best marriage for their children, predominated. He was also dubious about the future of the British Empire. In this he failed to see the strengths and resilience of democracies, unlike his fellow pragmatist, John Dewey.

From his reformist impulses, his idealism, and his ethical views, Schiller's views of education can be inferred. To some degree, education was bound up with eugenics as a moral ideal. In *Eugenics and Politics* he tied education to politics and society, in that one function of education is to separate and train an elite that can direct society. He viewed the reform of education as vital to the regeneration of society in order to counteract its "decay." Ultimately, the success of any society is more dependent upon the quality of its citizens than institutions or material conditions. Education is the key to cultivating and developing these qualities. Schiller was aware

that a hereditary elite could decline by resting on its oars. He argued that incentives are needed to bring forth the talents of individuals in the middle and lower classes, in the form of scholarships to the best schools for those who show promise but are without the means.

However, Schiller seems not to have noticed the problem with this view: that if good genes are essential to talent, and therefore must be passed along, then the environment is superfluous, and education is not as important to society as genetic endowment. If, however, breeding is a matter of environment and education, then genetics is not as important, undermining the very premise of eugenics.

Schiller argued for both a liberal education and incorporation of athletics, since they produce "fit" adults. "Fitness" has eugenical value and should be extended to the education of the mind. The danger is that knowledge may be reduced to a competitive game. Schiller emphasized the "intrinsic usefulness" of all knowledge, like his fellow pragmatist Dewey, but also saw the educational value of seemingly useless knowledge. Some goals of education may not have immediate benefits. Schiller argued that a good education provided salutary lessons in the proper use of leisure. Schiller also warned of the danger of an overly ingrown educational system, in which experts develop ideals and standards independent of "social welfare." Although he was in favor of a liberal education he also emphasized the value to society of such education and the importance of new knowledge in the adaptation of life to new circumstances. In these concerns he was closer to Dewey.

Notes

1. "Freedom and Responsibility," this volume, p. 330; "How Far Does Science Need Determinism?" this volume, p. 760.
2. "Fascisms and Dictatorships," *Our Human Truths*, p. 269.

21

FREEDOM AND RESPONSIBILITY

I

If the Social Revolution should ever pass from the region of vague sentiment into that of crude and cruel fact, there is at least one class of learned men whose extinction may be prophesied with as great confidence as that of priests and kings. When the amiable exhortation of the French revolutionist has been acted on, and the neck of the last king has been constricted with the entrails of the last priest, the last millionaire will no doubt have been smothered with the unsaleable remainders of the last professor of philosophy.

Such at any rate is the estimate of the value of philosophy Mr. Robert Blatchford's pamphlet, *Not Guilty, A Defence of the Bottom Dog*, very distinctly manages to convey. It is an appeal on behalf, not merely of the downtrodden and unsuccessful, but also of the degraded and criminal classes, and an indictment of what is, or passes for, 'justice', human and divine. He defends his clients on the ground, mainly, that they are the helpless victims of heredity and environment, whose brute instincts have been further brutalized by the horrible conditions under which they have been

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Humanism: Philosophical Essays, 2nd edn. (London and New York: Macmillan, 1912), pp. 283–312.

nurtured. And he denies *in toto* the right of society to condemn and to punish those who could not have been other than they are.

In other words, Mr. Blatchford (and with him presumably the whole party of militant Socialism) is essentially concerned with the old philosophic theme of Freedom and Responsibility, complicated though it is no doubt for modern minds with the problems of atavism, heredity and variation. But he scorns to seek the aid of technical philosophy. He is weary of the learned who darken counsel with technical verbiage. He has no use for useless learning, for "the tangle of Gordian knots tied and twisted by twenty centuries full of wordy but unsuccessful philosophers" (p. 169), nor can he understand (p. 16) why "the world is paying millions of money and bestowing honours and rewards in profusion upon the learned and wise and spiritual leaders who teach it to believe such illogical nonsense" as a man's responsibility for his acts. He prefers instead to argue the whole matter out again for himself; to reiterate the old fallacies, to repeat the old inconsequences, to be stopped at the old deadlocks.

Mr. Blatchford would possibly be surprised to find how much precedent there is for all his positions, if he had the curiosity and leisure to trace them back to their origins. Even his condemnation of the futility of philosophy is no new thing, and is mild compared with the things which philosophers have been in the habit of saying of each other. The opinion which the greatest philosophers have entertained of the efforts of their colleagues has usually been a low one. Herakleitos, the great Ephesian, used all his predecessors as illustrations of his maxim that much learning did not teach intelligence. And the philosopher-pedant has never been denounced more brilliantly and incisively than by Plato.

As for the use of Determinism as an excuse for the bad man, it has been one of the earliest inferences to be drawn from moral philosophy. No sooner had Socrates put forward the suggestion that virtue was (a sort of) knowledge, and thereby laid the foundation of a scientific study of morals, than this dictum was improved into a *reductio ad absurdum* of morality. It was at once pointed out that if virtue was knowledge, then vice must be ignorance, and that no one was vicious willingly, any more than ignorant. Vice, therefore, was involuntary, and no one should be blamed for being vicious. The retort, fixed for us in the *Ethics* of Aristotle (iii. 5. 17), that by the same reasoning virtue might be proved involuntary, could not arrest the controversy: it had merely to be accepted (as it promptly was by the Stoics) to bring upon the scene full-blown Determinism, and to inflict upon ethics a perennial problem which the majority of philosophers at the present day probably regard as insoluble, to wit that of reconciling the strict determination of every event with the moral demand that it *shall*, nevertheless, be possible to break the chain of circumstance in order to choose the right.

Clearly, therefore, Mr. Blatchford's contentions have abundant plausibility as well as many precedents. There is much excuse also for the lapses of his logic. The spectacle of human folly, crime, and misery is so harrowing that only the coolest intellects can bear coldly to criticize and carefully to examine proposals that promise a wholesale alleviation of the burden of man. And yet unless Mr. Blatchford's clarion is merely to create confusion and dissension in the ranks of the army with which man is battling with his secular foes, these are just the points to be scrutinized. The chief source of human suffering is not social. It is not a consequence of man's imperfect control of his own nature, nor of the imperfect development of his social sympathies and the resulting inhumanity to his kind. It springs from our inadequate control of the forces of nature, and can be relieved only by the gradual growth of the knowledge which is power. If the Socialists could prevail upon the nations of the earth to abandon the folly of their internecine strife, to put down their monstrous armaments, and to devote a tithe of their annual cost to scientific research, they would achieve more for the advancement of humanity, and even for their own aims, in twenty years, than they are likely to accomplish by centuries of merely political agitation.

But, even in dealing with those evils which are either social in their nature or capable of being mitigated by social expedients, we must be cautious. We must beware of letting our sentiment run away with our logic, and of adopting a philosophy which would ultimately stultify and sterilize all efforts at reform. We must not, therefore, allow our sympathy for the weak to unman us. We must not allow our pity for the degraded to drag us down. In making allowances for the victims of unfavourable circumstances we must seek to brace, and not to relax, their powers of resistance. We must, therefore, preach Freedom to them and not Fatalism, Effort and not Acquiescence. Still less must we ourselves begin by acknowledging the omnipotence of Fate. We must not despair of victory. We must vindicate the power of our persistent efforts to reshape the world within us and without us. In other words, we must uphold the reality of Human Freedom.

It is not, therefore, from any lack of sympathy with the humanitarian aspects of Mr. Blatchford's argument that it seems to us open to criticism. What we desire to attack is the logical inconsequence of his position. What we desire to show is that Robert Blatchford the Determinist cuts the throat of Robert Blatchford the social reformer. And what we desire to establish is that, whatever politics we favour, any advocacy of practical interference with the existing order of nature, nay our whole rational life, presupposes and implies the reality of our Freedom and the rejection of Determinism. But, of course, it is one thing to exhibit the practical importance and necessity of Freedom and another to establish its theoretical validity as a philo-

sophic interpretation of the facts of life, and in this larger undertaking we shall have to encounter the arguments of many of the philosophers of the past and nearly of all the present.

We may, however, at once proclaim that there is an enormous logical gap between Mr. Blatchford's theoretical position, and the practical consequences he seeks to draw from it. If we grant the former, we not merely need not, but cannot, assent to the latter. If we contend for the latter, we must begin by ignoring the former.

If it is true that "no man is answerable for his own acts," because he has had "no part in the creation of his own nature" (p. 10), if it is true that "law is based upon the false idea that men know what is right and what is wrong, and have power to choose the right," whereas really men are not good or bad, but merely weak or strong, fortunate or unfortunate (p. 19), if it is true that wrong-doers are "ignorant" or "diseased " or "insane" or "mentally deformed," and hark back "atavistically" to the savage and the beast, if it is true that our social conditions are bad, and acting on bad natures, create much vice and crime, if it is true that our "justice" is imperfect and ineffectual, and that our "punishments" largely fail either to reform the criminal or to protect society—if all this is true, does it follow that "all praise and blame are undeserved," and that no one ought to be punished (p. 203)? And does it follow that Mr. Blatchford's client, the "Bottom Dog," would fare better if he were transferred from the jurisdiction of morals to the tender mercies of Science, and were "entitled to be judged by the standard we apply to beasts" (p. 207)?

Mr. Blatchford is very confident: he defies us (p. 209) to deny one statement he has made, "to break one link of the steel chain of logic I have riveted upon our metaphysicians, our moralists, our kings, our judges and our gods," and tells us that "if all those (inferences) are not true, this book is not worth the paper it is printed on" (p. 203).

Well, let us see. Let us appraise the value of human beings according to the new ideals, with the coldly commercial and unsentimental eye of natural science, regarding no man as an end in himself and every one merely as an instrument to social well-being, and let us see where the "Bottom Dog" will come out.

The answer is not hard to get. For Sir Francis Galton has studied the social value of the different types of human being. He has calculated that the average value to the community of an Essex labourer's baby at birth is about £5, i.e. that moderate sum would be the 'present value' of the surplus of his production over his consumption of wealth during an average life. A baby genius (or even talent) would, of course, be worth buying up at many thousands of pounds by an intelligent society, and the new science of Eugenics has for its ultimate aim an increase in the natural supply of such

valuable infants. A baby criminal, on the other hand, or idiot, or lunatic, or weakling, or wastrel, clearly possesses only negative value for social purposes. Such creatures are a dead loss to the community, which has to keep up prisons, asylums and hospitals for their sakes, and to employ judges, doctors, clergymen and policemen to cope with them. Not only do they fail to enrich the community by useful work, but they are a heavy burden upon it, and probably have to be supported for the greater part of their lives at the public expense. Clearly, therefore, society would be better without them, and if Science could prevent their birth, it would unquestionably do so; if it could detect them after birth, it would extinguish them as speedily as possible. No sentiment of pity or prejudice about justice and right would impede its mercilessly reasonable calculations. The darker the colours in which the wretchedness of the "Bottom Dog" is painted the more urgent would become the case for his scientific and systematic suppression.

But would this conclusion commend itself either to Mr. Blatchford or to his client? Yet he comes very near to confessing that such, on scientific principles, would be the right and rational way of dealing with the criminal. If the criminal is a recrudescence of the beast in man, and comparable to a tiger or a shark (p. 213), why on earth should he not be treated as such? Surely Mr. Blatchford would not preserve him from extermination merely in order that he might provide sport for our judges and our police? In one passage (p. 215) Mr. Blatchford admits that "although the prisoner ought not to be punished, it is imperative that he be restrained." Quite a sensible conclusion, no doubt; but as an argument for leniency how verbal and how feeble! Mr. Blatchford can, of course, insist on reserving the word "punishment" for the retribution inflicted on misdeeds, and deny the application of the name to the treatment which aims at the protection of society and the reclamation of the offender. But would not such a defence savour of the hair-splitting of the philosophers whom Mr. Blatchford so despises? Besides, has he a right to ignore the facts that the actual treatment of anti-social conduct is largely inspired by the preventive, and even by the reformatory, views of "punishment," and that even a spice of vindictiveness, if there is fore-knowledge that the commission of a crime will lead to social execration, may act as a powerful deterrent from crime.

If, moreover, it is admitted to be "imperative" to "restrain" offenders, surely the cheaper and more effective the means the better. Science could certainly suggest modes of prevention far more efficacious than the punishments now in vogue, while at the same time cheaper and socially more advantageous. But it is probable that they would strike us all as strange and cruel. For example, it would be cheaper to brand or to mutilate than to imprison, and far more terrifying to vivisect than to hang. Moreover, in cases where even this deterrent failed, society might console itself with the

thought that it would reap great benefits from the advance of knowledge derivable from scientific executions. In the present state of moral sentiment, while the criminal is regarded as a responsible person who can to some extent control his actions, there is little or no prospect of any such scientific revision of punishments. But on what grounds could Mr. Blatchford object to schemes of this kind? Surely by appealing from current morality to Science he has precipitated his *protégé* from the frying-pan into the fire.

But even this is not all. Mr. Blatchford has fallen into what is logically a still graver inconsequence. He has so far argued—and we, to humour him, have joined with him—quite in the ordinary common-sense way, as if the mode and amount of the punishment of offenders were an open question and dependent on the arbitrament of society. *But this whole mode of reasoning involves the assumption of human freedom and a denial of Determinism!* He and we have both assumed that even though the criminal could not but commit his crime, yet society at least was free to punish him, or to pardon, or to send him to a hospital. But if Determinism is the true philosophy, this assumption is utter nonsense, and an alternative to the punishment is just as unthinkable as to the crime. Society can no more help itself than the criminal. Whatever is and happens, must be and happen. Nothing could possibly be otherwise. The murderer must commit his crime, the police must catch him, the jury must convict, the judge must condemn to death, the executioner must hang, Mr. Blatchford must take society to task and scold it and denounce its institutions, and fail to carry conviction; he must contradict himself and use just the bad arguments he does—and all this must have been predestined from all eternity!

It is astonishing that so good a reasoner as Mr. Blatchford should not have perceived the incongruity; but like most Determinists he has tacitly assumed freedom enough to grease the wheels of justice and to retain a meaning in responsibility.

Hence it is by no momentary lapse that he falls into an affirmation of Free Will. He is forced repeatedly to use arguments which are nonsense unless Freedom is real, because his whole case requires him to use them. He could not be a social reformer without them. How else could he argue that the social order can and should be changed, or assert that disease may be prevented (p. 9), or say that we *ought* not to blame or punish (pp. 19, 99, etc.), or declare (p. 236) "man cannot be blamed: society cannot be blamed. But both can be *altered*: by environment," or bring forward any measures for the altering and improvement of the social order? For all these things imply that at least two courses of events are possible—*possible really* and not merely to our ignorance—and that it depends on human choice and action which of them is to be realized. But in a fully determined world whence are they to come? It is vain to suggest that somewhere or other

there may be "a man with reason and knowledge and inclination for the task of improving society or the individual by *teaching* one or both."

If such a being exists, he will be one of the determined forces of the universe, and as powerless as any of the rest to alter its predestined course. The universe is destined to be saved or to be damned—we do not know which. And if we did know, it would not matter, seeing that we could not act otherwise than we do. That, inexorably, is the implication of Determinism. If we wish, then, to think the world as alterable for the better, as capable of varying its course, we must introduce some free agency into it to infuse some indetermination into it. A very little will suffice. A very little freedom will falsify the doctrine that everything is foredoomed in one single and inevitable way, and that nothing can change its character. Once there are real alternatives, and real choices, and real freedom in the world, man can master his fate and remould himself.

This is the ennobling faith which every reformer must hold; but it is *not* Determinism. It is utterly incompatible with Determinism of any sort or kind; and if Mr. Blatchford wishes to be consistent, he must choose between it and Determinism. His choice will be a free and most momentous one, but this need not prevent him from weighing the alternatives which are put before him.

If he chooses Determinism, he renounces the attempt to 'alter' society and to guide its fated course. But he may think that he has saved himself and the world from the taint of irrationality which the belief in Freedom would set upon it. But this surely would be a delusion. If it is impossible and irrational to choose, then his very choice of Determinism commits him to at least one irrational act of choice. If he replies that this seeming 'choice' too was determined, and that he could not have chosen otherwise, then the belief that he did really choose at least was an illusion.

Moreover, he will find that although he, by some fortunate necessity, was impelled to think (what he believes to be) the truth, others are by that same necessity constrained to remain deluded and to believe in a freedom which is irrational and impossible. Thus, one way the world has of exhibiting its rationality to a Determinist is to engender necessary errors and delusions!

Again, in spite of his enlightenment, he will find it just as impossible as heretofore to avoid relapsing into forms of speech and modes of thought which have meaning only if the freedom they imply is not an illusion. To be consistent, Determinism should erase from language all such terms as 'can', 'may', 'ought', 'should', 'need not', 'if', 'either . . . or', 'perhaps'. Nor is this a mere question of words; when we use them, we really mean them and really imagine, however mistakenly, that we are speaking of real possibilities and alternatives. But this is all wrong, if Determinism is right. We

should cleanse our minds of the attitudes of thought which correspond to all this Libertarian language. Doubts, hypotheses, possibilities, choices and alternatives should be as impossible in thought as they are in reality. If however, as is probable, Mr. Blatchford also should despair of clearing his mind of these delusions, must he not resign himself to regard a universe which *of necessity* engenders and harbours them as truly expressive of the nature of things? But why in this case should a universe which fosters such illusions strike him as particularly hopeful or rational?

If on the other hand he chooses to believe in Freedom and prefers a world in which there can be real alternatives, he will choose a world which can (perhaps) be altered and improved. In such a world, of course, the desire for reform can be rational, and the ordinary assumptions of his words and thoughts and acts will not be stultified.

But he will not, even so, escape from the charge of irrationality. For the first move of the Determinist will be to bring this indictment against the 'free' universe. Such a universe cannot, he contends, be fully determined; and if there is to be detected anywhere within it the slightest trace of indetermination, its rationality is compromised beyond redemption. If, he declares, there is anything anywhere of which the behaviour is undetermined to however small an extent, the rational order of the world is irretrievably ruined. Everything must be absolutely fixed; or else everything must get so loose as to dissolve itself in chaos. The menace is so terrible, the danger is so imminent, that it would seem to need the recklessness of a sceptic to reply that since the irrationality of the universe was manifest in either case, he at least considered himself free to choose whichever form thereof best pleased him; while it would require an unusual amount of philosophic courage to resist intimidation and to dare to question the conclusiveness of the deterministic plea.

Here then we come to the great antithesis of Freedom and Determinism, which may well claim to be the 'blue-ribbon' problem of philosophy. Its claim to this proud position rests in the first place on the fact that it is one of the few philosophic problems which are capable of interesting the ordinary man. Every one is capable of feeling its central difficulty, the conflict and compulsion of motives and the apparently 'free' decision of the 'will'. Every one also can perplex himself with the apparently unanswerable arguments for Determinism. And so, secondly, the problem seems a typical example of the inherent debility of human reason, which here is driven to assert the impossibility of what seems plain fact, and involves itself in irrationality, whichever of the alternatives it chooses.

This, however, is by no means wholly displeasing to the ordinary man, who readily reconciles himself to a situation which puzzles the professors of philosophy. He can the better enjoy this speculative deadlock, that it

causes hardly any practical inconvenience. For in practice we all agree to use language which (as we saw) implies the reality of possibilities, alternatives and free choices. The Determinist no doubt uses (or should use) all this phraseology with a mental reservation. He believes it to be an illusory consequence of our mortal ignorance, and consoles himself with the thought that if he knew everything, all this evidence of Freedom would disappear. But this pious hope cannot be said to make any practical difference. As an agent he must, in the actual state of his knowledge, behave *as if* there were real freedom in the world.

Hence it has been, very plausibly, contended that the whole question is devoid of practical importance. If, whatever the speculative position we may prefer, whether we are Libertarians, Determinists or Sceptics, we are all bound in our action to assume that some acts are free and some alternatives real, while others are determined and calculable, what need is there to solve the theoretic problem? Has it not practically solved itself? What difference does it make which theory is true, if they all lead to the same behaviour? Nay, upon the latest and most approved principles of 'pragmatic' logic, must we not hold that theories which lead to the same results in practice are not really different at all, but only verbally various ways of saying the same thing?

This attractive way, however, of cutting the Gordian knot appears to rest upon a misconception. The believer in Freedom at least cannot admit that his belief makes no difference to his acts, nor believe that the Determinist's belief has no influence on his behaviour. He must point out that if it is true that the alternative theories make no practical difference the reason is that one of them, viz. the Determinist, cannot be acted on, and that therefore the pragmatic test cannot be applied to it. If and so long as the Determinist acts *as if* he were free and able to choose between alternative possibilities, the theory his acts imply cannot be discriminated by its results from that implied in the Libertarian's acts. But so soon as the Determinist *feels* that he has no choice, and acts on his belief, the Libertarian holds it *will* make a distinct difference in his action. He will subject himself to all the paralysing influences of Fatalism. He will abandon the attempt to control his impulses. He will relax his efforts to overcome the 'natural' tendencies of his character, and to resist the pressure of his environment. And if one considers what the natural tendencies of the average man at present are, it does not seem probable that the effect of such self-indulgence will in the main be good and elevating or even conducive to the survival of Determinists. Thus the preaching of Determinism may do much harm, by relaxing the fibres of men's moral nature and by tempting them to let themselves drift upon a current of lazy habit, which they take to be the irresistible stream of Fate. No doubt in practice a consistent Determinist will hardly be found. But this is not to show that Determinism is harmless, nor

is it an argument in its favour: and even temporary fits of 'slackness' may be morally disastrous.

Of course no harm will come of a merely theoretic Determinism. To be refuted by its results a theory must be acted on. Until it is acted on, its truth remains in suspense, as a claim which has not been tested, or as a plaything of idle speculation. And to show that it *cannot be acted on* is to show, not that Determinism is harmless, but that it is meaningless.

It would be too much, however, to expect Determinists to assent to this conclusion. For it follows logically from *their* assumption that no moral revolution will result from the adoption of Determinism, because no man is free to adopt it, or not, as he pleases. Whatever view any one adopts, he was fated to adopt. Whatever the moral degeneration or dissolution the future may have in store for us, it was preformed and predestined by the immutable order of the universe. Hence it must seem idle to a Determinist to deprecate or to deplore what no skill or thought could have averted. It is silly to resent the inevitable, and this does not become less silly if we perceive also that our very resentment was inevitable too.

We come, therefore, finally upon one of the most remarkable peculiarities of the 'Free-Will' controversy, namely the fact that an argument which is valid and cogent for those who have adopted one set of assumptions has no cogency at all for those who have adopted the other. Superficially this seems a paradox which lends itself to sceptical conclusions: and these have accordingly been drawn by most of the philosophers who observed this singularity. But this is really a mistake: the true significance of the fact is quite different. In the end it turns out to be a legitimate consequence of the reality of choices. It merely means that, when we have chosen, we can abide (up to a certain point) by the consequences of our choice, and keep at bay the interpretations which would stultify it. Hence we must expect to find that in a sense a consistent Determinism cannot strictly be refuted, refuted that is by the purely, or merely, intellectual considerations which it would itself accept as a conclusive refutation. But we shall also find that the demand for such refutation is itself an error, and that the possibility of a wilful (and not necessitated) Determinism is quite consistent with the reality of our Freedom. We shall also strive to vindicate the plain man's faith in Freedom by explaining what is the real nature of our Freedom, and by showing how it may be conceived as a rational doctrine.

II

We have shown so far not only that it is grossly inconsistent in a Determinist to propose to reform the world, but also that he could not act, either

rationally or at all, except on the assumption of Freedom. But we made no attempt to explain either the truth contained in Determinism and the reason of its plausibility, or the real nature of Freedom, nor did we try to answer the case against Freedom as it is commonly presented. The whole question, consequently, seems to have been left in a thoroughly inconclusive and unsatisfactory condition.

We may now begin by considering the truth in Determinism. Why is it that we all so frequently assume that the future is fixed, that events can be calculated beforehand, and that predictions can be made which will come true? Why is it that so many philosophers go further still and assume that *all* events are in this way fully determined, and regard the idea that any event should still be indeterminate, uncertain, incalculable or as they technically say 'contingent', as fatal to science and as the very height of irrationality and absurdity?

The answer to this question will easily be found by any one who has trained himself to note that the 'truths' we assume are always relative to some purpose in which we are interested, and are not asserted aimlessly and at random. Now mankind has always been intensely interested in forecasting the future—for the best and most cogent of reasons. For had we been unable to devise methods of prediction, we should have remained the helpless sports of circumstance. It is very unlikely that we could have survived, and it is certain that we could not have prepared for and controlled the course of experience, even to the extent we now can. Hence foreknowledge of the future is man's capital achievement, an achievement of the greatest practical and vital value. Man is distinctively the animal that 'looks before and after', that observes the present, and studies the past, in order to control the future. Naturally enough, his intelligence has been adjusted to and moulded upon this vital necessity. And not only his intelligence, but his whole nature. He has grown a strong intellectual and emotional bias towards any idea that helps him to achieve his purpose. He is willing and eager to hail it as 'true'. Hence there has arisen a desire for prediction, a passion for certainty, which in some selected spirits (philosophers to wit) may be over-developed and rise to quite unreasonable and self-defeating heights.

But how was this desire to foretell, and so to control, the future, to find its satisfaction? Well, mankind did not know; but mankind was willing to try. It tried in all sorts of ways, and very queer and superstitious most of them now seem to us. What oracle have human faith and human craving left unconsulted, what mode of divination have they failed to think of; from what mode of propitiation have they shrunk, to what mode of magic have they scrupled to immolate their dearest and their best? A potent array of institutions and observances, a long list of pseudo-sciences, an astounding record of irrational absurdities and atrocities, attest the reality and persistence of the

human desire to lift the veil of the future. For this purpose the noblest of the ancients did not disdain, as augurs to watch the flight of birds, as haruspices to inspect the sacrificial entrails; they were proud to keep the Sybil's prophetic books or to trick the fates and to pamper the prescience of the sacred chickens with cunningly diluted gruel. No sooner had man looked at the stars than the thought at once occurred to him that these wonders of the sky must be fraught with significance for his terrestrial fortunes. And so he proceeded to conceive the marvels of their rhythmic motions as instruments of calculation, until the wisest of the ancients did not deem it a waste of time to observe the conjunctions of planets that determined the fates of men, or the portents of flimsy comets that were supposed to take a keen interest in the fortunes of the solar system. Modern astronomy is as much indebted to astrology for its birth as to the practical necessity of determining the length of the year and so the recurrence of the seasons and the right time for the exercise of agricultural foresight. Most of the ancient modes of divination, such as chiromancy, geomancy, catoptromancy, rhabdomancy, sortilege and incubation, have become merely learned names to most of us. But their equivalents still survive, sustained by their occasional success in satisfying human desires. The law, even now, does not think it derogatory to its majesty to persecute the poor palmists and fortune-tellers who try to make a precarious living out of the curiosity of those who despair of calculating their personal future by more scientific means. And whenever a gathering of undergraduates has inspirited a table to turn, it is always asked to indicate what horse is going to win whatever is the next important race.

But it must not be thought that the history of human credulity is merely a sickening and abject record of human folly, which has no value for Science. For out of all this mass of wild experimenting experience has selected what was workable. By outcasting superstitions Science segregates itself. Magic is the mother of Science, much as Error is of Truth; it is inferior to its offspring, not in its conception or its pedigree, but in its efficiency. Science is a system of magic formulas, which after many trials and with many tribulations man has made. But the formulas (or 'laws') of Science really and habitually work, and so verify themselves and are accepted as true: those of its unsuccessful and discarded rivals are only occasionally supported by a 'coincidence' or by the psychic tendency of many beliefs to verify themselves.

A scientific formula which does not work is impossible by definition. For if a formula fails to work when applied to the phenomena it was devised to control, it is condemned as false, and we seek to supersede it with a better. Nevertheless the fundamental ideas of Science are the same as those of pseudo-science or of magic. They are all ineradicably and intensely human, as befits the descendants of the human passion to con-

trol experience. Astrology, for example, rests on the same assumption as the most scientific Determinism, and only carries it one step further. It represents as calculable fact what Science as yet is content to treat as an unattained ideal, and so far from being intrinsically absurd the claim of astrology should be what every man of science must in theory aspire to. For if it is true, as Science assumes, that the universe is a fully determined and connected system, it ought theoretically to be possible to start in it from any changes which occur at any point, and, if we know them well enough to trace out their connexions, to calculate out the determinate alterations they must entail at any other point. Why not, therefore, observe the wanderings of the planets, and predict thereby whether our neighbour's dog is destined to recover from the mange? Nothing can be so lofty as to tear itself away from the causal connexion wherewith Science grasps it, nothing so mean as to escape from its clutches. Scientific 'law' cares for the least as for the greatest.

The conception then of 'law' has proved our magic passport to the order of nature. It has worked so well that many of us have quite forgotten its homely and human origin, and abstracting it from its context, have grown to regard it with superstitious reverence. It is often looked upon as a magical and a priori thing, which has no origin in the experience it controls and no dependence on the nature which 'obeys' it. We even hope by thus exalting it to extract from it a guarantee that the course of nature, which has heretofore behaved conformably with our idea of 'law', will for ever continue to show itself thus amenable to our needs. But we may postulate and proclaim a priori necessities of thought as much as ever we please; we cannot prove that it is an a priori necessity of thought that the course of nature should forever conform to our a priori necessities of thought. And even if it were, it would not set at rest the question as to what can guarantee a complete harmony between our thought and things.

But of all such a priori thinking our wishes are the fathers. The truth is much simpler and more prosaic. We have found that by assuming all events to be determined by 'laws' which (by a process of continuous approximation) we can 'discover' and formulate, we can reduce chaos to cosmos, and control our lives. But *Law means Determinism*. It means that there are series of events such that, once we know their law, we can start from A and predict B, and then C, and then D, and so on forever, in an absolutely certain sequence. If we choose to believe that anything was able and likely to follow upon anything else, the conception of law would be abrogated. But if we choose to believe in law, we believe that the course of events is in principle calculable and predictable. And if we 'discover' enough 'laws', i.e. hit upon formulas which work, we can, more or less approximately, forecast what is going to happen and take measures accordingly.

This then is the true reason why we all have a bias towards Determinism, in so far as we sanction and pursue the aim of Science. We will to believe in law, and law involves determination, so that Determinism seems to become the price of prediction. So whenever we want to forecast the future, we turn Determinists, and calculate as though the future were already determined. We must do this, or give up the attempt at prediction. In so far as a thing is 'free' to act thus or otherwise, its action is unpredictable. This then is the meaning of calling Determinism the universal postulate of Science as such.

But are the postulates of Science true? Of this nothing can assure us but experience, and experience pursued to the point at which nothing new can happen any longer. In our experience this is not (yet?) true. Novelties are still intruding on us daily. And so in point of fact our scientific guesses are often wrong in detail, and deficient in exactitude. In all the sciences 'laws of nature' are being rejected, re-enacted, revised and re-modelled daily. They are 'true' only in so far as they work, and are able to anticipate results which experience confirms. There is no more mystical nor higher test of their truth.

Nor does the general postulate that there are specific laws really rest upon any other ground. It too is held to be true, because it works. And no cunning of philosophic system-building can really safeguard it any other or any a priori truth. Our postulate might cease to work at any point or time. However dear and indispensable it had been to us, however deeply we had grafted it upon the roots of our being, however strenuously we might protest against a failure that would put us to intellectual confusion, we should have to submit to the rulings of experience and to recognize the *de facto* limitations of our principle. In point of fact our intellectual *débâcle* would not be quite so terrible as is often represented. If our postulate ceased to be usefully applicable to our experience, we should say that it had only seemed to be true, but was not, and search for some more tenable assumption. Or again it might work for some things and not for others. There is nothing *inconceivable* in a universe only partly 'subject to law'. It would be *inconvenient*, no doubt, especially if we were uncertain about the limits of its law-abidingness, and we should therefore admit the existence of this defect only in the last extremity. Some heroic souls might even persist to the last in their faith that the whole *must* be subject to law, though no mortal vision could ever detect its laws. But the majority of men would judge it better to get half a loaf than no bread, and would content themselves with believing the world as calculable as they could practically make it, and would not declare the world irrational and Science vain, merely because they could not calculate everything.

If then the world, or any part of it, happened to be 'free' and therefore

incalculable, we should so far find it inconvenient. But the inconvenience need not be considerable, if in point of fact the sphere of Freedom is restricted and its amount is not great. Hence the inconvenience of abandoning a complete Determinism may easily be less than that of believing our direct experience of Freedom, our immediate consciousness of the reality of choices, to be quite illusory. For, as we saw in the first part, Determinism also, by implying this consequence, administers a severe shock to our faith in the rationality of existence.

In point of fact and as things stand, the inconvenience of the belief in Freedom is wholly sentimental from the standpoint of the Determinist, and wholly imaginary from that of the Libertarian. For all practical purposes the belief in Freedom does not cause the slightest inconvenience. For owing to the limitations of our actual knowledge, there is always a great multitude of events which we consider to be theoretically calculable, but either cannot calculate at all in practice, or can calculate only so roughly as to leave extensive scope for what might be 'free' variations. If, therefore, some of these events were really incalculable, it would make no practical, but only a sentimental, difference to us. For, alike whether we thought them true or not, we should of course continue to treat as calculable all of them we wanted to calculate, and so should score as many successes as heretofore.

Secondly, and this is a still more important mitigation of the alleged inconvenience, we often as it is find ourselves in the position of having to deal with what we believe to be fully determined events, but with a knowledge of their nature so imperfect that we cannot but distrust the accuracy of our forecasts. But we do not on this account despair of calculating. For it is often possible, nevertheless, to calculate within what limits the actual result is likely to lie, or again to work out the alternatives which the defects of our knowledge leave open. In both these cases, therefore, all that is affected is, not the deterministic method of calculation, but only the confidence with which we regard its results.

If now we abstain from conceiving Freedom (wrongly) as an agency which is by nature infinite and unlimited, either in its power of breaking down habit and upsetting expectation, or of suggesting alternatives, what reason is there why the admission of a certain flavour of Freedom, of a certain degree of indetermination, should seriously interfere with our actual practices of calculation? Consider e.g. the case of human action. There is no practical difference in the way we regard it, despite the tremendous contrast of our theories. As it is, both Determinists and Libertarians are fully aware that they hardly ever know the character and circumstances of their fellowmen well enough to make sure of foreseeing their exact behaviour. Both agree also that it would be preposterous on this account to regard human actions as utterly incalculable. Both parties are agreed that whether there is

freedom in human action or not, human action is more or less calculable; both parties hold that it presents to our knowledge a finite number of alternatives and a limited extent of possibilities. And both parties are fully entitled by their theories to come to this practical agreement. Which is of course the reason why both parties can live together sensibly in society.

The Libertarian, however, would be disposed to declare the whole inconvenience an imaginary bugbear of the opposing theory. For he would deny the necessity of conceiving 'free' acts as quite incalculable. He would claim that his theory also was fully competent to satisfy the practical and the scientific demands for a foreseeing of events, even though it was bound to reject the metaphysical theory into which they had been perverted.

For why after all, he might urge, should Freedom be conceived as an infinite and uncontrollable force which is radically disruptive of all rationality and order in the universe? Because certain philosophers desire to conceive it so for controversial purposes? Because Determinists cannot bear to be deprived of a bogey which forms their sole argument against Freedom? Why should what he believes to be the truth be sacrificed to the interests of a philosophic party? How thoroughly characteristic of a certain type of philosopher! Your philosopher is a most exacting creature. If you give him an inch, he at once takes an ell, and claims the all. He must have all or nothing. He will not compromise with the clearest facts. If the facts confute his favourite theory, he denounces the 'scepticism' of their upholders. So here. A world that is not absolutely determined, he is determined to treat as a chaos. Nothing like our actual world can satisfy any of his demands. For he is never satisfied to use a principle just for what it is worth and in cases where experience shows it to be applicable. He is always wanting to make it absolute, and to apply it to the universe without reservation and discretion, dogmatically and a priori. And it is little enough he knows about the universe! His 'metaphysical' knowledge is a gigantic bluff. For it is one of his oddities that the less he knows, the more confident he grows. If, for example, there is the least ground in his experience for holding that the world is (in some *one*) sense one, his imagination will forthwith proclaim it as a universal and necessary truth that the universe is one also in innumerable other senses and is under an a priori pledge to behave itself according to his desires and expectations also in a multitude of other respects, which he has not inquired into and about which he knows nothing! Those, of course, who love the philosophic type of mind will understand engaging little idiosyncrasies such as these, and make allowance for them. But to the plain man's common sense they must often prove perplexing and alarming.

In this case, moreover, the metaphysician's 'logical' temper works very unjustly. He refuses to regard the forecasting of human action as a matter

of practical convenience and its principle as a matter of scientific method. He insists on taking it as something absolute and metaphysical, as an indefeasible revelation of the ultimate nature of things. So he is not only driven to misconceive its meaning and to exaggerate its scope, but is blinded to obvious facts which every one else has no difficulty in seeing, and beguiled into a most outrageous and indefensible travesty of the indeterminist position.

During the last thirty years quite a number of distinguished British philosophers have set out to discuss the question of Freedom. Most of them have confused the issue by playing upon the different senses of the word. Not a few of them have attempted to hoodwink the public by assurances that 'self-determination' was the only kind of Freedom thinkable or ethically needed. But every one of them has propounded the same caricature of the freedom of indetermination. And not one of them has made the slightest attempt to show that the doctrine they denounced was actually held by any Libertarian, or formed a logical deduction from which no Libertarian could escape.[1]

Now the caricature of Freedom which is in vogue for controversial purposes is, briefly, this: If you allege that there can be anything, however slightly, undetermined about any action, you allege the reality of motiveless choice. But this, so far from safeguarding responsibility, really renders responsibility impossible. For you allege that there is nothing in the agent's character or circumstances to determine his act in one way or the other. But if any choice is motiveless, all choice is motiveless. Any one, therefore, may do anything. The Pope is as likely to advocate atheism in his next Encyclical and to make a Cardinal of Mr. Blatchford as to condemn 'modernism' and the writings of M. Loisy; the Tsar is as likely to declare for the Social Revolution as for further repression, and to become a Jew as to rebuild his navy. Thus all reasonable expectation is defeated; all continuity of character is destroyed, and with it all responsibility, which rests on the connexion between action and character. In short the inevitable conclusion is that a world, into which the least taint of Freedom enters, lapses into chaos.

Now though common sense might find it pretty hard to dissect this sort of argument and to refute its premisses, it has little hesitation in declaring that its conclusions are absurd. Nobody has ever believed that in declaring in favour of 'free-will' he was committing himself to any such consequences. Nobody, therefore, could possibly be a Libertarian, if this were what Libertarianism meant. Probably, therefore, the Determinists have merely caricatured their opponents' position.

Investigation speedily raises this probability to a certainty. The grotesque cockshy which serves as the type of Libertarianism for the purpose of deterministic refutations is an absurd exaggeration of certain of its

implications. But it is probably prompted, not so much by conscious unfairness as by an unconscious bias. It is derived ultimately from an unwillingness to take from experience our notions, either of the nature or of the range, of our Freedom. For if philosophers had only been willing to admit that alike what our freedom was, how much of it we had, how powerful it was, how far it baffled expectation, how far it loosened the joints of the universe, were all questions to be decided by empirical observation, they could hardly have helped seeing that their proof of the impossibility of Freedom was fallacious, and that Freedom, so far from being a puzzle leading to terrible consequences, was involved in every unbiassed description of the act of choice.

The central fallacy in the Determinist argument lies in the assumption that if a choice is real, it is necessarily motiveless. This assumption, however, rests on a confusion between three distinct conceptions—choice, absence of motive, and indetermination. Choice (in the Libertarian sense) implies indetermination, but *not* absence of motive. A choice is necessarily between alternatives, but these would not be such if they did not appeal to the chooser and influence his character. It is a choice, therefore, between alternative *goods*, and these goods are motives to action which cannot all be realized together. Choice, therefore, implies motives, but if it is a real choice, it is really 'free' to choose between them. Motiveless choice, therefore, is an implicit contradiction. Now all the terrible consequences of Libertarianism as depicted by the Determinist, follow not from the choice, but from its assumed lack of motive. They are repudiated, therefore, in repudiating the latter.

Again, it is an error to conceive indetermination as absence of motive. Lack of decision is not the same as lack of motive. What is indeterminate in the act contemplated as 'free', is precisely what is determined by the choice between the motives. The act, therefore, is indeterminate until we choose, and determine it. The indetermination is real, but it is determinable, and so terminable.

Now that such is the nature of the indetermination in acts of 'free' choice is precisely what introspection reveals. We never feel that we have to choose out of an infinite expanse of possibilities. The alternatives, which appeal to us and are real for us, are never numerous. Our character, our circumstances, our history, our habits, our ideals and notions of what is 'good', do by far the greater part of the selection and immensely narrow down the field of abstract possibility. This is a simple fact of direct observation. But it is no less obvious that though all these forces determine by far the greater part, say nine-tenths, of our conduct, and form a fairly rigid framework which our 'freedom' presupposes and with which, and upon which, it operates, yet they nevertheless do *not* determine everything, but

allow scope for apparently 'free' choices, which are accompanied by a heightened and peculiar sense of power and responsibility. Why then, should we refuse to acknowledge this fact? Why should we not admit it as evidence that the choices, which seem real and feel real, are real?

Certainly the 'convenience' of conceiving events as determined affords no cogent reason for blinding ourselves to the facts. We have seen that there are limits to the convenience of methodological fictions. Nor does the difficulty lie in the conception of our nature which we have to entertain, if we would think it capable of Freedom.

For we have merely to think our nature as partly plastic, and such that all its reactions have not yet grown rigid. We know that habits grow upon us, and that when they are firmly fixed, they irresistibly control our conduct. But while they are growing, may there not be a stage in which our response is still variable and really indeterminate, however determinate it may grow afterwards? And why regard this as 'irrational'? Is it not the essential function of 'reason' to keep habits plastic in their responses to the requirements of life? Do we not know that, if anything can raise us out of the rut of hampering habit, it is 'reason'? Is not 'reason' continually breaking up the habits which have grown too rigid for our good, restoring the plasticity of youth, and clearing the ground for fresh growth. This, if we look not to the abstract word, but to what it really does, is the true meaning of 'reason'.

This, moreover, is why the experience of Freedom is so closely bound up with the moral struggle. For at first the old habits and desires, which have become 'bad', will frequently prevail over 'reason'; in the end they will be transformed into new habits which are 'good'. But while the process lasts, there will be a plastic stage in which action will be variable and indeterminate.

Clearly, therefore, Freedom is a concomitant of mental and moral growth, a consequence of an incomplete and therefore plastic nature. The alternatives, moreover, between which we 'freely' choose, will be the outcome of that nature. Both will always spring from that nature, and remain connected with it by psychological lines of descent which our logic can retrace. Our choices, therefore, will be real for our natures under our circumstances. Whichever alternative our act selects, will seem continuous with what we were and did before. It will not appear upon the scene as an unforeseen irruption from nowhere. It will seem to us a probable and reasonable thing to have done. It will astonish no one who knows, or thinks he knows, us. But we should not have judged otherwise the alternative which was rejected. Had it been enacted, our friends would still have said they quite expected it. Before the event, therefore, either event seems equally probable. After the event, both still seem intelligible, though

(according to the Determinist) only that which actually occurred was ever possible. But is it not absurd to say of such a doctrine that it destroys the continuity of character and the rationality of the universe? Has it not rather succeeded in satisfying the demand for a calculable order of events by representing Freedom as a choice between alternatives *all* of which are calculable, and in a manner rational?

It would seem, therefore, that the conception of Freedom, just as the plain man experiences and understands it, is quite rational and philosophic, and that it can be 'refuted' only by being travestied. But can we assume the offensive in our turn and refute Determinism?

The difficulty of this undertaking is due to a very simple cause. We have seen that the truth underlying metaphysical Determinism is its usefulness when conceived as a method of Science. It follows from this use that every fact presented by every science is capable of being conceived deterministically. Consequently we never seem to get at any facts which can be used against the deterministic view. Even our 'freely chosen' alternative may be represented as the only one which could have been chosen. Hence a *direct* disproof of Determinism seems impossible.

Our attack, therefore, must be more subtly planned. We may ask why does any one choose to be a Determinist? Now any one regarding Determinism merely as a postulate of Science has, of course, a cogent answer. If we desire to know and to predict and to prepare, we have no other choice. We must adopt the assumption which enables us to attain our end. So far from questioning this assumption the Libertarian must try to show that his own position is not incompatible with it.

He may, however, draw attention to the voluntary character of this fundamental postulate. Apparently, he may infer, the power of choice and the desire to attain ends are superior even to this great principle. For they select and constitute it. We can choose to adopt the Determinist principle. We do choose to adopt it, because we prefer it to its alternative and it yields us what we want, viz. the power to control events. Now perhaps it may be denied that this refutes Determinism, because even though our choice seems free, it may really be determined. But still the fact shows that our human contribution to our conception of reality cannot be quite a negligible quantity and not worth mentioning. Is it not strange that the helpless victims of Fate should play such a leading part in the making of that Fate?

A still more curious fact for Determinism to consider is that though the whole world may be thought of as determined, it is just as easy and just as reasonable to think of it as pervaded by a streak of Freedom. The Libertarian view, as we have described it, is just as possible and as rational as the Determinist; i.e. it is just as capable of interpreting the facts. If one or the other is to be preferred, it must be by an act of choice. But this choice

cannot be determined by logical considerations. For as a purely logical theory either will work. Our choice, therefore, must be a logically undetermined, i.e. a *free*, one between theories whose intellectual appeal seems equal, because both yield consistent interpretations which cover the whole field of nature.

Even, therefore, if a Determinist should never choose again, must he not exercise his freedom *at least once* in adopting his theory? Must he not prove its truth and make the interpretation which supplies his evidence, by a fiat of his will? But is not a Determinism which depends for its establishment on a free choice a self-contradiction of Determinism? We can be Determinists only because we are determined to deny our freedom. And *because we are free*, we are free to do even this!

In any case is it not a humiliation for Determinism to have to recognize a free choice underlying its whole fabric? For it has defined such choices as irrational. To a Libertarian on the other hand the situation seems quite reasonable. He has not defined choice as irrational as such, and has no prejudice against a 'free' one.

Nothing could be more natural to him than that the affirmation and the denial of Freedom should both be free choices. As William James aptly says, "Freedom ought to be freely espoused by men who can equally well turn their backs upon it."

Nor is the philosophic situation we have reached a paradox. It is quite in accord with the results of examining other fundamental questions. It is becoming clearer and clearer that ultimately our convictions everywhere rest upon acts of faith and of choice, which make demands upon the moral virtue of courage, and must precede what is called the 'proof' of their truth. The fact that we must believe that we are free to some extent and that our consciousness of choice is not delusive, and so must choose Freedom rather than Necessity, does not stand alone. We must, for example, have faith also and must choose to believe that the world is orderly rather than chaotic, in order to acquire the notion of the uniformity of nature; i.e. we must choose Science rather than impotence. We must choose to believe that our experience is real and no dream, and that its incidents are not the figments of a nightmare; i.e. we must choose a society rather than a solipsism. And lastly, we must choose to believe that the struggle of life is worth living and worth trying, and not worthless; i.e. we must choose a sort of optimism and not a pessimism.

In none of these cases, perhaps, can our position be established coercively against the contrary bias. For in all of them we have to make our venture and to choose our side, *before* we get the evidence which verifies and confirms our choice.

But what finer proof could there be of the fact that the functions of our

intellect are intimately bound up with those of our will and our moral qualities, and that our 'reason' is designed to co-operate with our feelings and our instincts, and not to hold stupidly aloof and to criticize without understanding the dumb faiths of the living creeds which guide man's responses to the requirements of life?

NOTES

1. Henry Sidgwick forms an honourable exception to whom these remarks do not apply. The discussion in his *Methods of Ethics* is scrupulously fair, and excellent so far as it goes.

22

IS THE DISTINCTION BETWEEN MORAL RIGHTNESS AND WRONGNESS ULTIMATE?

Philosophic language is always ambiguous, and therefore philosophic debate is usually at cross purposes and inconclusive. Hence it would be very rash to plunge into a debate like ours without inquiring first what its terms may mean. Verbally, perhaps, the most obvious meaning of the question prescribed to us is to insinuate that the distinction between moral rightness and wrongness is not ultimate, and should be taken as relative and merely quantitative; or in other words that right and wrong shade off into each other and are not ultimately distinct in kind. But I am loath to believe that this is what the committee, or whoever it was that selected our question, really meant by it; for this meaning would clearly be subversive and calculated to undermine morality. I prefer, therefore, to take it as demanding an inquiry into the psychological nature of the predicates 'right' and 'wrong' which are so frequently used in ethics and supposed to be the terms in which what is popularly called 'conscience' expresses itself, and as raising the question whether in ultimate analysis they will stand or will prove to be derivative and reducible to something simpler and less formidable.

Proceedings of the Seventh International Congress of Philosophy, ed. Gilbert Ryle (Oxford: Oxford University Press, 1931), pp. 319–323.

Now such an inquiry would unquestionably be important. It would seem to be an indispensable presupposition of ethical theory, which without it could hardly rise above random speculation about ill-defined and uninvestigated terms.

Moreover, to arrive at clearness about the meaning of these terms, it will be necessary to examine their denotation as well as their connotation. For on the latter we can hardly expect any initial agreement. Comparison would only show that moralists entertain very divergent ideas about rightness and wrongness. Many of those who use a Teutonic language seem disposed to hail Kant's account of the Categorical Imperative as the final analysis of the nature of right. Others endeavour to follow in the footsteps of Darwin and Spencer and to regard it as emerging from some non-moral order, or as the feeling which supported the *tabus* of savages.

Without siding with either party in such disputes, should we not first seek light by investigating the *denotation* of these terms?

Let us first inquire in what regions of the moral universe they are endemic, in what languages they are recognized. We shall then, unless I am much mistaken, make the surprising discovery that they are, not universal, but distinctly rare. The full-blown distinction between *right* and *wrong*, indeed, appears to occur in English alone of the great civilized European languages. It cannot be *translated* into French at all, which has to use *la justice* as its functional equivalent. I observe that M. Parodi has preferred *bien* and *mal*, which are still more general. In German *recht* and *unrecht* seem to be adequate translations; but *unrecht* is primarily a negative term. And Dr. Medicus has used *gut* and *bose* ('good'—'evil', not 'good'—'bad'), which are only functional equivalents. Swedish, I am informed by my friend Professor J. E. Boodin, agrees with German. The Latin languages, like French, show a blank. Etymologically regarded, the primitive perception underlying the distinction, and chosen to illustrate it metaphorically, seems to have been the difference between *straightness* and *crookedness*: for 'wrong' originally seems to have meant *twisted*. Moreover, both 'straight' and 'crooked' are still colloquially used in a moral sense.

It may humbly be suggested, therefore, that before any extensive structures of ethical theory are erected on the distinction between 'right' and 'wrong', systematic inquiry should be instituted into its geographical or linguistic prevalence. We should ascertain also their equivalents, and consider especially whether they are *exact* and true translations, attesting an identity of moral sentiment, or are only *functional equivalents*.

There is here a great field for research, demanding the cooperation of linguists and philosophers, in which many discoveries may be made, and which is particularly deserving of the attention of an international gathering. For even the most cursory incursion into this field will show that

philosophic terms in different languages very often fail to translate each other, and that all languages have lacunae, which may be highly significant. For example, the remarkable lack of a vocabulary for *volition* in Greek vividly reveals both the cause and the effect of Greek intellectualism. Greek is equally deficient in terms which can properly be translated 'right', 'wrong', 'duty', and 'conscience', and the functional equivalents in use most misleadingly slur over the dominance of an aesthetic phraseology in Greek ethics and the identity of manners and morals in Greek life.

I have myself encountered great difficulties of this sort when I tried to translate the cardinal notions of my voluntaristic logic into other languages. I found that the notion of 'relevance' was entirely foreign to any philosophic language. It was an intrusive law-term even in English, forced upon the lawyers by the practical need of finishing law-suits, but flatly contradicting the philosophic insistence on dragging in the totality of reality. Similarly 'meaning' proved to be a word which cannot be rendered by any single equivalent in French or German, and which never occurred in the index of any intellectualistic logic. The case of 'right' and 'wrong' will I believe turn out to be very similar and a case in point.

What then are we to make of a distinction which appears to occur only in a few Teutonic languages? Can we conceivably make such a distinction a criterion of morality anywhere but in an English-speaking country? We should assuredly be mobbed. Clearly the ultimate question of morals has to be expressed in other and more cautious terms. And anyhow we need an ampler and more impartial survey of the psychological facts before we indulge in moral dogmatism. Even when we have made our survey its results may not be easy to interpret. The more limited the denotation 'right' and 'wrong' are found to have the more difficult will it be to contend that they are ultimate, and the more vigorously will this pretension be disputed by those peoples whose languages have no words for them.

The word 'ultimate' itself, moreover, is afflicted with a distressing ambiguity. It should mean, I suppose, the last term in some series or undertaking; but are we to mean by it the last thing we can reach by 'analysis', or the last thing we can rise to by 'evolution'? Is the process which ends in the 'ultimate' one of digging down and drawing out the meanings of words, or one of soaring as far as we can towards our highest ideals? Clearly there will be no inconsiderable difference between these two acceptations of the 'ultimate'. If we adopt the first, we shall have to accuse those who fail to analyse out our distinction of intellectual shortcoming; and they will retort that no analytic ingenuity can extract what is not recognized in language, and hint that a distinction which is so rarely recognized cannot be so very important. If we adopt the second, we shall have to hold that most systems of morality have not risen to our lofty level. Or, alternatively, that they have

made such good use of *other* means of controlling human conduct that they have not needed to appeal to the distinction between 'right' and 'wrong'.

For my own part, however, I can see no objection to recognizing the distinction wherever we can find it, and using it pragmatically for all it is worth. If it works well and helps to control human propensities to any appreciable extent, we shall regard it as valuable or even as invaluable. If it works ill and gives its conscientious sanction to atrocities and obstinately thwarts the progressive readjustments of former 'duties' to changing conditions of life, we shall regard it as a nuisance, and undertake the education and enlightenment of errant and backward consciences. If it does both, in different persons, we shall discriminate, and insist that the value of a 'conscience' depends on the moral value of its possessor.

But in each of these cases our judgement will be based on *present* values; in none of them need we make the value of this distinction depend on *ex post facto* speculation about its 'origin' or fantastic hypotheses about its 'validity'. Scientific method does *not* require us to propound any theory about the 'animal origin' of conscience. It is enough to say that it must have entered the world at some time, at some unspecified point which we may never be able to determine, as an 'accidental variation', and was preserved and developed because it proved to have survival-value. It is equally unsound in method to account for its present value by ascribing to it a 'divine' origin or by regarding it as an occasional visitor from a transcendent world of things-in-themselves. Both these *façons de parler* are superfluous translations of actually experienced values into the language of metaphysical or theological theory. If the workings of 'conscience' were always pernicious, it would be denied 'validity' and its 'origin' would be traced to diabolic intervention or to an irruption into the cosmos from an underworld of chaos.

Such would seem to me to be the natural way of treating, not only the distinction of 'right' and 'wrong', but all the other moral distinctions in vogue. It is intended to be *natural*, without being either naturalistic or super-naturalistic. And I trust it is not inconsistent with a frank admission that the psychological nature and significance of our distinction, and indeed of our whole moral vocabulary, still stand in need of further exploration: for unfortunately the co-operation between psychologists and moralists, as between psychologists and logicians, has been so very imperfect that we do not yet really know the facts we are trying to discuss. I wish therefore that this Congress could be induced to appoint an International Committee on Nomenclature, such as the zoologists already have, and would authorize it to draw up lists of the chief philosophic terms in use, together with (*a*) their translations, (*b*) their *functional equivalents* in the var-

ious languages, and (*c*) the *lacunae* in the latter. I hardly dare suggest (*d*) that the Committee should be empowered also to make recommendations with a view to removing ambiguities, absurdities, and abuses.

I must conclude with a word of apology for a paper which has been so largely lexicographical. I should have liked to have given a simple, clear, and unequivocal reply to our question; but I felt that much spade-work had still to be done before we could hope, I do not say to solve it, but even to discuss it with intelligence and profit.

23

ETHICS, CASUISTRY, AND LIFE

A very little reflexion on life should suffice to convince us that in a general way human nature must by this time be pretty well adjusted to the conditions of life. For if man could or would not adjust himself to these conditions and if he were powerless to alter them, he would simply have been eliminated, like the prehistoric monsters whose bones we behold in our museums. Instead of being master of the earth, man would have become a fossil. Actually, although he has mastered the earth, he is still, however, subject to the biological law just stated. He has risen in many ways above the merely natural plane and has evolved an ethical and spiritual social order; but nevertheless he must still so conduct himself and his affairs that he does not incur the penalty of extinction by which natural selection stimulates and regulates the behaviour of all that lives. If he refuses to comport himself suitably, he takes the consequences like every other living thing.

This is the biological fact which conditions all human action and underlies human society and its moral order. It is the foundation on which all forms of social life must be built. It is the basis, also, of the whole psychology of the individual man. All that we do, either individually or collectively, must in the last resort reckon with the biological

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Our Human Truths (New York: Columbia University Press, 1939), pp. 189–202.

necessity of achieving adaptation between man and his conditions of life in one way or another.

In the course of ages this adjustment has already been achieved in a large measure, and the problem of right living has to a large extent been solved. We have not only learned what we must do to survive, but a willingness to do it has become fairly deeply ingrained in our nature. So we can by now rely pretty well on its promptings, even though minor adjustments to meet minor changes in the conditions of life are constantly going on.

Consequently we can take this adaptation for granted as a fact and use it to account for our psychological equipment and our normal behavior. The actual adaptation of human nature to the conditions of human life will, therefore, furnish a good starting point for the theory of human behavior and the study of ethical ideals. It is the natural starting point for all ethics, and Humanism is keenly aware of this.

We may, therefore, at once emphasize an obvious consequence. It follows from the adaptation of man to the conditions of terrestrial life that he must be built for action. Or, rather, for reaction on the stimulations he receives from outside and for active interference with them when he does not like them.

It follows further that his actions or reactions will be effected with his whole nature, wholeheartedly and with an exertion of all his powers. For life is far too strenuous an affair for him to handicap himself by neglecting any source of strength, any avenue to success.

The perception of this fact should discredit and invalidate in principle all attempts to split human nature into independent faculties which cannot or will not co-operate and contribute to the success of the whole organism. It disposes of the divisions and antitheses of an antiquated faculty psychology which split human nature into antagonistic parts, with different functions, different spheres, and different aims. It condemns the search for "elementary" processes in the mind, for it implies that the simplest unit of mental life that could actually exist would already be a reaction-upon-stimulation. It condemns also the dualisms which split human life into a sphere of theory and a sphere of practice and sever contemplation from activity and action by an insuperable chasm.

In its protest against all such artificial divisions and psychological fictions Humanist ethics will uphold the integrity of human nature and the need for studying and understanding its behaviour as a whole. It will allow the existence of all the traditional counters of ethical theory, denominated instincts, impulses, desires, volitions, thoughts, cognitions, et cetera, only on the understanding that they can be really used to explain what in fact men do. It must be made explicit that the meaning and the truth of all such distinctions is functional. And Humanist ethics will take pains and

pleasure in tracing out how in fact these entities enter into human actions and determine man's behavior.

Consequently it will be possible to dismiss at once as mythical the conceptions of pure thought, pure reason, and pure intellect. These are fictitious entities, because it stands to reason that our intellect, like the rest of our equipment, must be constructed for action, must be a means for effecting salutary responses to stimulation and beneficial adaptations to the environment. In other words, it must be a practical intelligence, watchful, adaptable, ready in every emergency to intervene to direct or to shape the course of events, finding itself rather in the intelligent things it can do than in the abstract things it can think. This, moreover, would seem to be the sort of intelligence we have, and a "pure" intellect is impossible nonsense.

Similarly, what we call our "knowing" must bear the imprint of man's total nature. Knowing must be conceived, not as an independent function, standing in no vital relation to life or hovering serenely in a supersensuous ether, but as a prelude to action and as an instrument for guiding and improving it. "Pure" science, therefore, must be declared a misnomer. What is so called should be conceived as a late and extreme specialization of the impulse-to-know which has grown very remote from the immediate urgencies of action and oblivious of the connexion to which it owes its being.

As a matter of fact, nothing is more instructive and more apt to allay doubts about the rationality of the real than to trace the connexions of the pure sciences with the practical needs out of which they spring. Usually, moreover, this is quite easy. Pure mathematics, for example, will never be able to disavow its dependence on applied mathematics so long as the very word "geometry" betrays the fact that its original meaning and motive was simply "land surveying." And attempts to derive the impulse to science from mere curiosity collapse as soon as we inquire whether it is credible that the instinct of curiosity had no survival value for the animals that developed it. It is true that penguins, squirrels, monkeys, and sundry sorts of busy-body seem to have somewhat over-developed this impulse; but one may fairly question whether men of science will prefer to count such creatures in their spiritual pedigree rather than the strenuously living forerunners who found life full of practical problems and devised theories for their solution. The transition from the thought that is directly practical to that which is called theoretical, because its connexion with practice seems more remote, is not, therefore, hard to find or to understand.

Nor is it impossible to give a plausible account of the transition from action to thought. Thus, the first need of biological adjustment is quickness of response, action as nearly as may be instantaneous. Only so can sudden and unforeseen dangers be avoided and opportunity be promptly seized.

Hence, all living creatures develop a capacity for rapid action and grow full of impulses to act and that without hesitation.

But this organization is not sufficient. When the conditions of living grow more complex, predicaments are not infrequently encountered in which there is need to discriminate the actual case from past cases which resemble it. A careless identification of this case with its predecessors, and too rapid and impulsive action, may become perilous, and may even prove disastrous. It then pays to stop to think, provided always that the delayed response to the situation proves more salutary than the impulsive action would have been. Accordingly, occasional thinkers arise and prosper. We have all become such occasional thinkers, though some of us think only occasionally. However, the occasions for thinking and the value of thinking and of its contribution to success in life are enormously exaggerated by the philosophers, who naturally incline to magnify their office. Actually, we can get on very comfortably with very little thinking most of the time, while a being entirely devoted to unending self-contemplation, like Aristotle's God, clearly could not flourish on our earth.

In detail, thinking seems to proceed as follows. First comes the "stopping to think," already mentioned, which may be likened to a "boulevard stop." This is not an intellectual process at all, but a restraint of an impulse to act, an inhibition of a natural and congenital tendency. Next, the thinker uses his respite from action to examine his actual situation in the light of past experience. He analyses it, considering in what respects it resembles and in what respects it differs from similar situations which he recalls. Indeed, he had probably noticed some of these differences from the first; they were what gave him power and inhibited his original desire to react at once.

As a typical occasion for thinking we may take the case of a wild animal smelling around a trap or a fish nosing a baited hook. The fish is normally constructed to snap up any worm he comes across, so he impulsively swallows the hook; if he could stop to think, he might notice that this worm has a line protruding from it. This difference might excite suspicion, were it noticed, and prompt him to decline the worm. But as a rule fish do not stop to think; and even if they do, they cannot long resist the temptation of a wriggling worm dangling before their jaws and incontinently gulp it down—which is why fishermen can make a living.

A being capable of thought, however, will act differently. After due, but not too long, reflexion, he will act, but act in a way modified for the better, in consequence of the reflexion. So finally he survives, whereas rash action would have ruined him.

Note that in this analysis the stress on the salutary modification of the impulsive and habitual action is essential; it is what justifies the reflective

act and the loss of time it cost. Otherwise the stopping to think was unnecessary and the delay before action harmful. Hence, good judgment is shown, not by perpetual thinking, but by thinking only on occasions when the delay before action is beneficial.

It is important to observe the essential feature of this explanation of the genesis of thinking. It represents the reflective act as effecting a closer adjustment to the particular situation at the time than could have been achieved by the impulsive act which is a product of habit and past routine. We see, therefore, how misleading it is to represent rational thought as concerned with rules and "universals"; it is really required and, elicited by the need of dealing with the particular and special case, especially with the case which proves recalcitrant to the current rule. Aristotle here is a much safer guide than Plato. He saw that action was concerned with the particular case and that this might always prove exceptional; whereas Plato is the father of the philosophic delusion that science is not interested in the particular case. Science is interested in nothing else than prediction from particular cases; and the general rule is merely an instrument for facilitating adaptation to the particular case. Only so can its use and the limitations to its use be understood and justified.

Now all this does not hold merely in logic: it remains true throughout all ethics. Right action is always an affair of particular cases; and the right act is the right response in a particular emergency.

Man's whole equipment, then, should be conceived as relative to his mode of life. His intelligence, instincts, impulses, and desires all fit him to live successfully a life he feels to be worth living. This life, moreover, has long been a social life, and so his nature has grown social, too, though not yet so social as to preclude all clashes between his social and his presocial ("selfish") impulses. Still, his acts normally have reference not merely to himself but also to others. He is normally interested in and fond of his family and friends, his tribe, and his country and can often be induced to sacrifice his more "selfish" interests for them.

This double aspect of human life, however, personal and social, generates a large number of problems and demands continual adjustment of the most various kinds. In general terms, a man must learn to take account in his actions not only of his own welfare but also of that of others, and of a multitude of social organizations, with which he is connected, by which he is affected, and in which he is interested.

These multifarious relations enormously complicate the problem of living, and generate great numbers of difficult situations in human societies. To extricate himself with credit from these difficulties a man needs both intelligence and good will, right feeling, and motives strong enough to guide his action aright. There arises, therefore, a pressing problem of the

best adjustment of these various factors; and about this problem different men may, do, and will, take different views.

Some of these views will, of course, be extreme. Those who incline to intellectualism will assert that reason, and reason alone, is enough to solve all the problems of conduct. Others, like Kant, will declare that there is nothing good but the good will, and that the good will is enough. It would seem to follow that a well-meaning fool may be worthy of our highest respect, however pernicious may be the consequences of his acts.

It is clear, however, that there is no reason why a man should not develop all these desirable qualities and learn to balance them harmoniously. His moral education should teach him how to do this. Actually, in every society more or less persistent and intelligent attempts are made to equip him with the qualities which are considered socially necessary and desirable. Every society formulates them more or less definitely and tries to enforce them by moral rules, intended for the guidance of its members and for the control—if need be, the restraint—of their actions.

This is how and why moral codes arise, from the customs, taboos, and initiation rites of savages to the Golden Rule, the Ten Commandments, the Twelve Tables, and the elaborate and unending legislation of the modern State. These codes are all enforced by all the sanctions that are available, especially the religious. The religious sanctions are particularly directed upon those portions of the social code which are most difficult to enforce, where other motives fail. Other powerful sanctions are the political, alias the police; social approbation and reprobation, alias public opinion; the prudential motive of enlightened self-interest, which appeals only to the intelligent and the farsighted; considerations of health and good taste; caste ideals like chivalry and *noblesse oblige*; a naturally healthy taste in pleasures; and last, but not least, a moral faculty or conscience. This last, however, needs to be trained and educated intellectually, and always is so trained in every social *milieu*.

In spite of all these variations of moral motive, however, much the largest part of the conformity of individual action to social requirements probably continues to be due to mere custom and brute habit. Hence, the moral danger of too rapidly upsetting social habits and relaxing the authority of immemorial custom.

It soon turns out, however, that all rules and all codes involve themselves in a peculiar difficulty, which seems fatal to their claims. Sooner or later they always encounter cases to which the rules as stated do not seem to apply. If you insist on applying them with pedantic strictness, they work badly and the results are outrages upon your moral feelings. Moreover, the hard cases are hard intellectually as well as morally: for it is hard to understand why they should defeat your rules. At last it is perceived that it is of

the nature of rules to generate hard cases—and that not only in ethics. In this way the problem of dealing with hard cases, otherwise known as "casuistry," overshadows all ethical practice and theory.

Now, at first sight the remedy seems obvious. The cure for insufficient rules is more rules—more precise and detailed rules. If the commandment "thou shalt not kill" is seen to be too broad and, indeed, impracticable, then you can formulate the conditions under which killing is no murder. In this a system of casuistry became an indispensable adjunct to every moral code. The most elaborate and scientific was that compiled by the Roman Catholic casuists, especially the Jesuits.

But unfortunately the method of casuistry does not solve the problem of deciding cases rightly. However detailed you make the supplementary rules which eke out your code, you cannot foresee everything. You still encounter special cases which elude you. You can get no guarantee that the infinite particularity of the case will not in the end defeat your rule.

Meanwhile, what have you done? You have tried to forecast, in advance of the event, the circumstances of all the cases that might possibly occur. You have tried to construct a system of ethics a priori. But to do this you had to consider in the abstract all the possibilities of human conduct. You had to foresee, therefore, all the possibilities of human depravity you could think of and to discuss them, in order to decide under which of your major rules they should be condemned and to determine the exact amount of their guilt. Clearly, reflexions of this sort will be extremely demoralizing, and casuistics, when put into cold print, will be shocking reading, especially to pure-minded folk who would never have bethought themselves of a tithe of the immoral possibilities which the casuist seemed to elaborate so lovingly. The handbooks of casuistry, the guide books for seventeenth-century father confessors, are perhaps the filthiest literature ever compiled.

Healthy moral feeling, therefore, naturally revolts against scientific casuistry. It did so, very effectively, in Pascal's *Provincial Letters* and swept away Jesuit casuistry in a flood of moral indignation. Would that someone would deal similarly with the filth which is now being disseminated under the guise of "psycho-analysis"!

Ever since Pascal's attack Roman Catholic casuistry has been morally in bad repute. It has stunk in the nostrils of the Protestant public. But intellectually it had not been overcome. The problem of casuistry had not been solved. Protestant moralists shrank henceforth from concocting systems of casuistry, but they renounced thereby the duty of guiding moral action. Instead of deciding cases of conscience, they were content to talk vaguely and feebly about "moral ideals." And, to make sure that their moral ideals would not be misapplied or come to grief on a reef of hard cases, they were formulated in rich, abstract purity until they became

inapplicable altogether. Theoretic ethics has been meaningless and practically useless ever since.

The typical example of this craven policy is found in the "categorical imperative" of Kant. As he formulated it, it cannot really be applied at all to any case of human action. It is so completely purified and purged that it is totally devoid of content. It vociferates, indeed, "do your duty," but it contains no hint of what your duty is. If, despite this forbidding formalism, you try to apply it, it soon turns out that you can extract from it a seeming vindication of any conduct you please. Thus, the only reason it can urge against the crime of murder is that it cannot be "universalized." But what does this mean? Does it mean that all cannot attempt to murder or that all cannot succeed in murdering? The categorical imperative does not say. Yet the former interpretation is not impossible. Universalizing murder might commend itself to the Borgias or to the gangsters of Chicago. It might conceivably result in a society of would-be murderers, all so skillful and efficient in protecting their own life that no murders would actually occur. On the other hand, a mere bungler might use Kant's principle to justify his murder. He might say, "according to Kant any action is right that can be universalized. Well, that covers my case. Like the ruthless rhymester, I murdered my wife because I simply had to stop her snoring. Anyone who had heard her would have done the same. Therefore I did right."

The true moral of this *reductio ad absurdum* of the code idea of morals is that the attempt to regulate action by a code should be given up. We should cast about for a different conception of the relation of principles to cases. Such a conception can be found; it was recommended long ago by Aristotle and fits in beautifully with the logic of Humanism.

Moral action, Aristotle tells us, always deals with a particular case. So does all action and all thought; for every thought is an act. Moreover, the case we think about must always be a hard one, hard enough to arrest impulsive action, else we should not have stopped to think. Thinking about a moral act, about what we ought to do, is, therefore, quite in line with any other thinking. Here, too, we examine the situation in the light of our moral experience and according to the moral habits we have formed, dealing with it according to the best of our knowledge and belief. Then we act. If our habits were good, our experience of similar situations adequate, and our intelligence sound, we shall have decided aright; we shall have done what we ought and have won the approval of right-thinking men who understood our case. Moreover, our moral act will react upon our moral habits. Our right decision will confirm right habits and strengthen our grasp of moral principles. These latter are thus the ripe fruits of right conduct, not its presupposition. They arise from moral experience and embody its lessons. Just as scientific laws are formulas drawn from events in order

to predict events, so moral laws are formulas extracted from right actions to facilitate more moral actions. Thus a principle formulated ahead of its application to a case is only tentative. It is not certain, a priori, that it will apply to the next case upon which it is tried. It is always capable of further growth and should never be allowed to grow rigid. We should always remember that circumstances alter cases and that cases elicit and develop principles.

In all these respects moral knowledge entirely conforms to scientific knowledge and is supported by the analogy of the latter. In scientific knowing, also, principles arise in the course of experience and are suggested by observation of events and then confirmed by their working. Their use is to predict and to control events, and if they fail to do so they are in danger of rejection. Moreover, any application of a principle has a reaction on the principle: it may develop or modify it. Thus Humanism can make provision for the unending progress alike of science and of morals.

Lastly, attention should be drawn to a curious and instructive parallel between ethics and jurisprudence which will serve as the best confirmation of the doctrine just stated. There is not merely an analogy, but at bottom a logical identity, between a case of conduct and a case at law. The moral case and the law suit are both cases for decision, and no one could content himself in the latter with principles that cannot decide cases. This is a great advantage law has over ethics—it has to get rid of inapplicable principles. But it, too, is troubled by codes. Indeed, code-law has been the prevalent type of law. Its assumption is that the code contains all the rule required for the decision of all cases; hence, all that the judge has to decide is what rule of the law he will apply to the case. In fact, however, he cannot always do this. Since the code was enacted, new conditions have arisen which its makers had not contemplated, and these may give rise to cases which the code cannot deal with properly. Every code, therefore, will sooner or later grow out of date. It requires, therefore, constant recourse to supplementary legislation or else to "legal fictions," by dint of which cases the legislator never dreamed of are brought under his rules by legal ingenuity.

But there exists, also, a completely different way of meeting the difficulty. Instead of enacting a code we can adopt a system of "case-law," such as that familiar to us in the "common law" of England and America. In this system the principles of the law are not formulated ahead of the case, nor ever stated explicitly and universally. Its sole assumption is that right decisions have been rendered in the past and that from them principles may be extracted which will apply to and decide aright analogous cases in the future. So the conduct of our case takes the form of quoting precedents and appealing to past decisions of the court to obtain a favourable decision of the present case. Thus, counsel for the plaintiff will contend that the judg-

ment in Smith *vs.* Robinson is applicable, while the defendant relies on Brown *vs.* Jones. The judge may set aside both precedents and decide in accordance with White *vs.* Black.

Now this procedure has distinct advantages. It yields a very plastic law which can develop further and be adjusted to new circumstances without recourse to further legislation. Such law is "judge-made," being made by the decisions of experts, and will usually be better than the laws made by blundering, harassed, and frequently corrupt, politicians. Moreover, though no courts are infallible they can under this system correct their errors, even when a final court of appeal, like the House of Lords or the Supreme Court of the United States, has made them. Suppose that a supreme court has handed down a judgment which, though legally final, is condemned by the best legal opinion, either at the time or in view of its subsequent working. Of course the actual decision cannot be reversed, any more than a wrong decision under an antiquated code; but the precedent can be sterilized and the law modified. It is merely necessary to wait till a similar case occurs which may be thought to involve the same principle. Then, if the court (which may meanwhile have undergone changes in its composition) is desirous of reversing its former judgment, it can always find enough differences between the circumstances of the first case and the second to base on them a decision in a different sense. Thereafter there will be a precedent to quote on either side; but the decision which is less harmful will be deemed the better law and the wrong decision will thus be set aside.

It may thus be shown that a distinctive treatment of moral problems, also, is associated with the Humanist attitude in philosophy, and it will clearly bear considerable elaboration. For our present purpose, however, it must suffice to have shown how the problem of right action may be handled in the concrete and rescued from stupid rigourism and empty formalism.

24

EUGENICS AS A MORAL IDEAL

Eugenical reform, the need of which was set forth in the last chapter, as the only alternative to social decay, divides naturally into two great branches, which may be called the negative and the positive. *Negative eugenics* aims at checking the deterioration to which the human stock is exposed, owing to the rapid proliferation of what may be called *human weeds*, under the conditions created by cultivation: it is imperative to cope with this growing evil, and easy to see that, unless something is done to stop them, the weeds will impose intolerable burdens upon the more valuable flowers of humanity, and will crowd them out. The admonition to cultivate our garden includes, therefore, the duty of weeding it.

It is also fairly easy to see what sort of thing must be done. For the weeds of civilization are largely *consequences* of civilization. Under other social conditions they would not flourish and could not exist. Natural selection would speedily eliminate them. All that a society desirous of rational action has therefore to do is to refrain from cuddling and cultivating them, to withdraw the protection extended to them by social institutions, or, better still, so to improve on nature's crude and cruel methods as to eliminate them painlessly, rapidly, and effectively. Of such improved

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Social Decay and Eugenical Reform (London: Constable and Co., 1932), pp. 28–47.

methods many are known, and others can be devised. Negative eugenics therefore, though an urgent need, is practicable, and probably the most important social aim philanthropy can set itself at present.

I

But negative eugenics is not enough. It is powerless to *improve* the human race and to lift human life to a higher level. It can only arrest deterioration. If we want improvement, progress, the creation of superior types of humanity, the realization of ideals, we must look to *positive eugenics*, which sets itself to inquire by what means the human race may be rendered intrinsically better, higher, stronger, healthier, more capable, so that human life may become happier and more worth living.

Now this is a very much bigger and harder job. The more one goes into the ways and means of it, the more difficult it looks. Still, it is not a task to despair of. It is not impossible. Some thing very like what is needed has been done once, and can presumably be done again. For the present human race has evolved, from something we all think lower and inferior, by the efforts of creatures much less potent, intelligent, and well equipped than ourselves. Under providence no doubt; but is it not very near blasphemy to assume that the creative *nisus* was exhausted in evolving us, and cannot be trusted to sustain further efforts if we will make them? Is it not unspeakably base and craven for us to content ourselves with remaining the poor creatures we are, when we might become something greater and better? For us to despair of carrying on the evolution of man would be to confess ourselves traitors to the cause of progress and *essentially inferior* to our ape-like ancestors who aspired to better things *and attained them!* As, moreover, only the most besotted optimist would contend that at present man is perfect and needs no improvement, it is clear that he *ought* to be improved. He ought to be improved in a great variety of respects, in all possible ways and with all possible speed. And it is a great shame that we have done so little to explore these possibilities. Herein lies the essential and enduring justification for positive eugenics.

II

Now if the function of positive eugenics be such as has been indicated, it clearly constitutes a moral ideal at least as good and legitimate as any other. For it is fit to stimulate our moral energies and to evoke moral enthusiasm. Moreover, it may very well fill the gap in our social structure left by older ideals which have faded or become defunct under the conditions of

modern life. It is almost a *secret de polichinelle* that modern life stands in great need of new and effective ideals, and that morals are in desperate need of reinforcement, precisely and particularly in the quarters with which positive eugenics would most directly be concerned. I mean, of course, the social relations of the sexes and the arrangements for the propagation, preservation, and education of the human kind. These have always constituted one of the major problems of human society, and to whatever ideals, motives, and sanctions any society has appealed, no arrangement has ever been quite effective and satisfactory in practice. Now it is no exaggeration to say that over large areas of the civilized world sexual morality has broken down, not merely in practice—which would be nothing new—but even more palpably in theory, and that the great institution which has hitherto assured the continuance of the race, the family, is everywhere showing ominous symptoms of collapse. It is high time, therefore, that we discovered or devised some further moralizing influence.

It is evident, moreover, that the moral agencies on which we have hitherto relied to curb individual licence and self-assertion are progressively losing their grip on the moral situation. For a variety of reasons, including the unwisdom and unprogressiveness of their attitude towards the problems of modern life, the religions all seem to be waning, and though their moral value is not perhaps in all cases beyond cavil, there is nothing to take their place.

Certainly ethics cannot hope to do so. Theoretic ethics is a broken reed. No intelligent man can live long in any academic atmosphere without becoming aware that academic ethics has no positive moral value. Indeed, on the whole its value is strongly negative. It is often positively demoralizing. The academic disputes as to how (if at all) the Good is to be defined, and how it is related to pleasure, may conceivably be a good mental gymnastic, though even this may be doubted. But it is an old story, as old as Socrates and the beginnings of ethical reflection, that, as his critics complained, ethical reflection is very upsetting to moral beliefs. ' Know thyself' does not mean 'Respect thyself', and does not tend to translate itself into 'Improve thyself'. So the intellectual analysis of instinctive and ingrained emotions and convictions is apt to be merely disintegrating.

The professors of morals usually try to counter this criticism by contending that moral theory cannot be *expected* to have any beneficial effect upon moral practice. Morals, they say, merely provide the material for ethical theories to contemplate and speculate about, and it is vulgar and Philistine to look for any more intimate and vital relation between theory and practice. Substantially the same answer is given to a second objection that ethics, as it is taught in universities, diverts our natural moral energy into unprofitable channels, and fritters it away in the futile discussion of

artificial and antiquated subtleties which never mattered much and have long ceased to have any practical meaning, while it leaves aside, untouched and unmentioned, the real pressing problems of moral life.

This second charge leads on to a third, the most damaging of all. Moral philosophy is practically useless, not merely because it has adopted a false theory of the relation of theory to practice. Its professors have intentionally, of malice prepense, and in their own selfish interests, made it useless and meaningless, in order to shirk a theoretic problem which they could not solve and dared not touch, lest it should get them personally into trouble. This problem concerned the application of moral principles to concrete cases. After the Catholic moralists in the seventeenth century had come to grief and fallen into ill repute by evolving a very scientific but very demoralizing system of Casuistry (upon mistaken lines) in their vain endeavours to solve this problem, the Protestant moralists, who were really involved in *the same* difficulty, thought it safest to steer clear of the subject of application, to cases, to fact, to life, altogether. So, in order that the purity of moral principles might run no risks of contamination from contact with the sordid facts of life, they proceeded to make them *inapplicable* in principle.

The culmination of this sort of trickery—for it is nothing more—is to be found in the Categorical Imperative of Kant, which ostensibly proclaims the sacrosanctity of Duty with tedious reiteration, while actually forbidding us to ask it what, in fact, our duties are. It is still esteemed in academic circles as the supreme effort and example of a pure morality, and largely accounts for their emptiness. Its academic admirers have over looked the damning fact that it is only 'safe' because it is utterly meaningless. For a principle that cannot be applied to concrete cases at all, or (what comes to the same thing) can be made to answer them in any way any one pleases, is as meaningless and worthless in theory as it is in practice.

III

Eugenical ethics clearly will not fall into this trap. It will not refuse to be 'practical'. It will not refuse to consider application to cases. It will avoid the dilemma of Casuistry by pointing out, with Aristotle, that moral rules are never absolute, nor meant to be taken in abstraction from cases. Hence they are never in themselves decisive. They are meant for the guidance of moral agents, with whom the decision must remain. But these must learn to apply them with an intelligent appreciation of the circumstances of each case. And the better they understand the circumstances under which they are called upon to act, the better is their judgment likely to he.

Hence the enormous enlightenment, which we owe to modern

biology, as to the laws which determine our physical and mental inheritance, can, and should, affect our actions, and modify them for the better. For example, the man who knows that there is heritable weakness, defect, disease, or insanity lurking in the stock from which he springs, and that he may either he a 'carrier' of such a defect, or himself succumb to it, should conscientiously consider the probable effects of his defect, not only on himself, but also on his offspring. If he finds himself compelled to regard himself as hopelessly tainted, he should abstain from parenthood. If he is not so had as that, and thinks that he may risk marriage, he should at least make sure that he does not marry into another tainted stock, and should scrupulously avoid defects identical with those of which he knows himself to be the hereditary victim. If he is drawn towards a woman afflicted with a similar taint in her blood, say insanity, he should vividly realize the likelihood that some or all of his children will go mad, even if their parents themselves escape the doom they transmit.

Already eugenical moral judgments of this sort are far from rare, though they will have to attain a much greater diffusion and intensity before they can do much to rid human stocks of dangerous 'recessives', or even create a social sentiment strong enough to support strong measures against those who will not or cannot see their duties in this eugenical light. For it is one of the most distressing features of the situation that such considerations *will* not occur to those who need them most. The feeble minded, for example, just because they are such, arc very unlikely to perceive their duty to posterity. Being incapable of exercising self-control, they will have to be controlled by other means.

But this social control of those who cannot control themselves clearly belongs rather to the problems of negative eugenics. There is no doubt that heritable but preventable defects contribute a large percentage to the flood of human misery and that their inheritance can and should be stopped. An allusion to the social failure, involved in the existence of vast numbers of blighted lives brought into the world to suffer needlessly and uselessly, was only needed to illustrate the hideous and repulsive immorality of our present social order and of the systems of ethics and moral philosophy that do not hesitate to approve of its atrocities, or at best say nothing about them.

IV

We may now proceed to consider what suggestions *positive* eugenics can make to improve the social order and the human race. We should advocate for this purpose, in the first place, a resuscitation of an ancient institution which has played an enormous and, on the whole, a beneficial part in his-

tory, but has in recent times lost greatly in repute and in many countries fallen into disuse. I mean the larger family, clan, or *gens*. It is not too much to say that originally the *gens* was the backbone of the early civilizations. It was nearly everywhere the social unit interposed between the individual and the tribe, city, or state, and far more potent than the latter in controlling and training the former. The most cursory reader of Roman history can hardly fail to apprehend that it is very largely the history of the great Roman families, their ambitions, rivalries, and policies, and owes its distinctive features to their continuity and tenacity of purpose. Similarly, the Roman character, in virtue of which, more than of anything else, Rome conquered the world, was formed by the stern discipline of the *patria potestas*.

Our histories do not perhaps make it equally plain that the early history of the Greek cities was almost equally dominated by the great families, and that so long as these endured aristocracy was the natural form of government in Greece as in Rome. Similarly, it is obvious that the history of the medieval Italian city-states is essentially family-history, and the superb palaces which adorn them are intelligible only as the abodes of noble clans, of whom a surprising number have survived to our days. The stable civilizations of the East, again, the Chinese and Japanese, owe their survival primarily to the family-system which endured through all the vicissitudes of wars and dynasties.

It seems clear then that the *gens* as a form of social organization is highly conducive to the preservation of a biological stock, and so of any valuable qualities of which it may be the vehicle. The *gens* is not, however, by itself or merely, a biological stock; it is at most one-half of such a stock, and as inbreeding is impossible or dangerous, an association of *gentes* into a congenital aristocracy is requisite to conserve the qualities of a superior stock. It follows that the conception of the *gens* must be reformed in the light of modern science ; it must embrace the *cognati* as well as the *agnati*, it must no longer be conceived as patrilinear *or* matrilinear, but as *both*. Our noble families should realize that they must trace their descent through both their parents, and that biologically the mother is just as important as the father, and that the captivation of a callow boy by a flighty ballet-girl may mean the ruin of a noble stock. This realization is likely to be a powerful check on the *mésalliances* which are a blot on so many pedigrees. In future King Cophetua will not marry his beggar maid so lightheartedly at sight.

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Another novelty to introduce into the old clan-system would be a more democratic organization. There does not seem to be any good biological or

social reason why the position of head of the clan should descend by primogeniture or seniority without regard to merit and ability. It should be made elective, after the fashion sketched in the next chapter, and it is conceivable that with a small number of electors with a strong *esprit de corps* and an intimate knowledge of all the circumstances, all keenly alive to the welfare and greatness of their family and anxious both on public and private grounds to pick the best man, better elections might as a rule be made than with the vast hordes of ignorant and careless voters to whom we now entrust our political destinies.

Of course, it would be necessary to endow the clan with a legal status and certain sorts and degrees of authority over its members. In particular there would devolve upon it the duty of controlling the matrimonial vagaries of its members. Rules, of a eugenical character and intent, would have to be laid down as to the conditions under which the clan's assent to a matrimonial alliance would be granted or withheld. These rules would evidently be more effective and easier to enforce than ordinary legislation to prohibit socially undesirable marriages, and would more narrowly restrict the right of a member of a noble clan to follow his whims than that of ordinary citizens. Rightly; for the principle of *noblesse oblige* would clearly apply.

But in itself there would be nothing new about the principle of family control of matrimonial affairs. It is already and everywhere a very real influence, and in many societies, past and present, left the individual, especially the woman, very little choice. Too often it took the form of forcing women to make 'good matches', i.e. to marry rich or powerful old men, whom they detested. Perhaps under eugenical tuition they may detest them less in future, because they will have more admiration for the qualities of which wealth and power are commonly the consequences.

It may be hoped, however, that in the eugenical society of the future family pressure on the individual will tend to be exercised in a more rational and salutary way, and will interfere with the individual's liberty of choice only in cases where there is genuine ground for objection, and he might well pray to be saved from his own desires. Hitherto, the strongest argument for the love-match has been, not the insight and wisdom of the parties to them, but the shallowness and unwisdom of the principles on which the *mariage de convenance* has usually been arranged. In future we may hope that eugenical qualities and records will enter more and more into the preparations for the great adventure of mating, and will exercise such a fascination over the young that they will find it easy to fall in love with their possessors.[1] It is not probable indeed, for several reasons, that marriage will speedily cease to be a lottery, but it need not be so *appallingly risky* a lottery as it is now rendered by the prevailing ignorance of both par-

ties as to their own and each other's defects. And in course of time it ought to become a lottery in which every one worth marrying should have a good chance of drawing a prize, in the shape of a eugenically sound and commendable mate.

Finally, the institution of the improved clan-system outlined above would not detract from the influence of the narrower family upon the individual, but would reinforce and reinvigorate it. It might indeed be contended that it would suffice to rely on the family spirit alone, without the clan, to control the individual, simply by cultivating social approbation and recognition of eugenically superior families and thus fostering family pride. Now history shows that family pride is a potent passion, and one to which men are capable of sacrificing themselves and everything else. It would therefore be a master stroke to enlist it as an ally of the eugenical conscience. But there can be no harm in further reinforcing and regulating it by setting it in the wider context of the clan. We can hardly err by imposing too many structural restraints on the licence of the amorphous hordes that throng our modern Cities.

VI

Of course, I am aware that these proposals mean a revival of aristocracy. But the question should be raised whether a true aristocracy is not worth achieving. If we emancipate ourselves from catchwords, democracy is a means not an end, defensible only as conducive to a better life than was possible under a reign of privileged classes whose superiority was merely imaginary. The real argument for political equality is not that men are born equal, but that they are born so *unequal* in so many ways, and that society requires such a variety of services, that the only practicable form of political organization is to ignore their inequalities and to give votes to all, and then to trust to the intelligent few to manipulate or cajole the many into abstaining from fatal follies. Now this is not a very strong argument, though it may have been stronger than any that could be urged for any of the old alternatives to democracy. But a eugenical aristocracy would be a novelty in the political world, and would really *be* superior. Moreover, if we aim at better things, we must follow nature's method. Whatever else natural selection means, it means that some are to be preferred to others, and we too must select if we aspire to better types of man.

But what *are* the better types of man we should aspire to? The critics of eugenics often assume that it must be possible to state them with their specifications all complete, before it is possible or worth while to make the least eugenical effort. But this is a complete delusion. It is not the way we

ever learn. We learn by trial and error. We do not know what the good, or rather the better, is, any more than we know what the true, or rather the truer, is, in advance of experience. Until we have experimented and learnt wisdom from the outcome of our experiments, we can only state in general terms that it would be good to achieve something better than the existing average of man, a creature stronger, healthier, wiser, more intelligent, trustworthy, and moral, and less ephemeral. Nor need we hesitate to add, 'more beautiful', though from the strictly biological point of view beauty is perhaps the hardest of all the coveted qualities to account for rationally.[2]

There is, however, one piece of advice which may safely be given to any society that attempts to remould itself nearer to the heart's desire by eugenical expedients. This is that all attempts to reach an ideal must start from the actual. It is no use to postulate, to begin with, a human nature that does not exist. The mentality invoked and the motives appealed to must be such as are familiar to human psychology; the institutions presupposed must be those operative in our actual world. Neglect of this proviso was the fatal mistake which Plato made in his *Republic*, and which condemned all his ideals to sterility and futility. Plato postulated a philosopher-king with absolute power and perfect wisdom, who was to institute the ideal state by an instantaneous *coup d'état*. But his first measure was to be grotesquely impossible. All above the age of ten were to be driven out of the city, and the philosopher-king was to rule and educate the remainder. Evidently Plato did not realize that he could not have taken care even of a single baby.[3]

VII

Any practicable, and therefore serious, proposal for eugenical reform must eschew such follies. It must not presuppose a revolution but must begin to be operative here and now, and operate more potently as more resources are placed at the service of the eugenical idea. We may therefore conclude this chapter by sketching one such institution which could be started by private enterprise with quite a moderate outlay, and ask whether it would not have an effect of the sort desired. We may call it the Eugenical Baby Show, and could proceed as follows:

First, let a representative committee be formed of doctors, educators, scientists, artists, practical philosophers, and other persons in whom the public would have confidence. Next let them collect funds and organize their Baby Show (or perhaps, at first, merely a Eugenical Section in a Vulgar Baby Show, which would serve as a control experiment), offering as many and as

substantial prizes as their funds permitted. The parents of the babies entered for these prizes would, of course, have to state their pedigree and to allow their statements about the history of the family to be verified. Then the babies would be themselves examined and the awards made after due consideration both of themselves and of their ancestry. Finally, and as a matter of course, their pictures would be published, like those of our successful athletes and other notorieties. For evidently, to be the first eugenical prize-winner of the year would be a high social distinction, and a prelude and stimulus to further honours. In subsequent years there would be periodical revisions and renewals of the awards, and further publicity about the doings and development of the prize-winners, who would no doubt be aided by eugenical scholarships, with more pictures. They would thus remain in the public eye, and much would be expected of them—more, and more important things than are now expected of a prince, duke, athlete, or film star, the attractions of whom they would in a manner combine. They would lead a strenuous life and one highly competitive, but glorious, and would from time to time be re-examined and re-appraised, in order that the committee of eugenical judges might estimate how far they had judged aright, and whether their prize-winners were availing themselves of their opportunities. When their education was completed, they would go out into the world as distinguished men ready made, with a national reputation, greater and better deserved, because more in accordance with their intrinsic merits, than those of the characters with which I have compared them. Every profession would be open to them, and their success would be practically assured. They would be flooded with lucrative and honourable offers of employment, and no right-minded girl would dream of refusing their offers. So they could always make their fortunes by marriage, if they did not prefer to do what would be still better, namely, marry eugenical prizewinners of the opposite sex. A eugenical first prize would soon be recognized as the greatest prize to be won in the lottery of life.

And what about the lower prizes and the honourable mentions? They, too, would be well worth winning, and would stimulate many ambitions, including that of reversing the original verdict and surpassing the original victors. Thus, insensibly but constantly and inevitably, the thoughts of all would be turned in the direction of eugenical excellence, and gradually but surely, their thoughts would influence and improve their acts. It is safe to predict that sooner rather than later an enlightened public opinion, thus converted to eugenics, would compel every State to take over the private enterprise of improving the race, and to extend and enforce it by legal sanctions. And then biological evolution might get under way again, and man might grow into a being as far superior to his present type as he now is to the gorilla and the chimpanzee.

NOTES

1. Cp. *Eugenics and Politics,* pp. 215-216.
2. Cp. *Eugenics and Politics*, ch. iii., §12.
3. *Republic*, 541A.

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CAN DEMOCRACY SURVIVE?

Politically, the chief lesson of the World War has been the utter failure of expert government. Expert government is one of the greatest and most attractive of political ideals, to which the world is constantly reverting in spite of frequent disappointments. It sprang from the protest of the Athenian aristocrats against a democracy which excluded them from public service and nominated its highest officials by drawing lots. When Socrates declared that virtue was knowledge and government an art that needed skill and science, he was making himself the mouthpiece of the aristocratic criticism of Athenian institutions and the father of all bureaucracy, not only of the bureaucracy whose paradoxical features were presently to be delineated in the *Republic* of Plato. Socrates had his reward—in the cup of hemlock; for the democratic leaders did not fail to see what a danger bureaucracy would be to the sort of democracy they led by the nose. But bureaucracy triumphed, nevertheless—alike in the substitution of professional armies and navies, controlled by privileged and trained officers, for citizen levies, and in the substitution of a regularly selected and permanent civil service for the popular election of magistrates and judges.

Before the war bureaucracy was dominant almost everywhere, and

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Our Human Truths (New York: Columbia University Press, 1939), pp. 228–245.

many great States were pretty nearly nothing but bureaucracies. In the Austrian Empire the bureaucracy alone preserved its unity amid a chaos of quarrelling nationalities; the Russian Empire also was ruled and held together by the bureaucracy of its *tchinovniks.* Germany boasted (with some reason) that it had the most highly trained and skilled, the most intelligent and efficient, of all bureaucracies; while only the Indian Civil Service could claim to rival it, though the Indian Civil Service had little reason to be proud of its record in Mesopotamia during, and in India after, the war. Diplomacy, moreover, was a highly privileged and aristocratic profession in all countries—except in America (the decisive factor!)—which none of the skilled diplomats could understand and which they all mismanaged.

Yet how did all these experts and professionals conduct affairs and meet the emergencies created by the war? Never has a war employed so many generals and disclosed so few good ones. Never have the occult arts of diplomacy incurred and deserved such widespread contempt. Never have there been greater opportunities for statesmanship more pitiably lost. In the Great War the great bureaucracies were all defeated and destroyed, after having led their countries to ruin through a series of incredible blunders—diplomatic, military, and political. The Austrian bureaucrats, who started the war on the false theory that all the various peoples of the Empire would be as eager as they were to avenge the murder of Francis Ferdinand, contrived to alienate their allies Italy and Rumania. The Russian bureaucrats lost the war at the outset by mobilizing their coal miners, although they had already called up eleven million more men than they could arm and had at once lost the Polish coalfield and the imported coal from Britain and Germany. Hence their growing inability to move their armies and to feed their cities, till they were swept away by a revolution the imminence of which they had not the wits to perceive. The German bureaucrats, after having been obsessed for years by the fear of a "war on two fronts" against France and Russia and having rejected on this ground Joseph Chamberlain's offer of a British *entente*, managed to plunge Germany into a war, not only with France and Russia, but also with the British Empire, and forced America to join their foes at the very time when the outbreak of the Russian Revolution offered them an easy victory.

By contrast with the "skilled" rulers of the bureaucratic States the politicians of the "democracies" shone out as paragons of skill. They at least had not forgotten the arts of persuasion and could get their peoples to follow them. They at least had not forgotten the ancient maxim *populus vult decipi* and could successfully deceive their peoples. They told all the necessary lies to win the war (and sundry others); but they got them believed, whereas the skilled rulers had lost even the art of lying plausibly. This was a great source of weakness to them, both at home and abroad:

they had lost even the perception of the right moment to stop the war and to save their own skins! In short, never in history was there such a display of bureaucratic stupidity and professional ineptitude.

These historical facts suggest, not only that there is a specific sort of stupidity which is generated by bureaucracy, but also that there is a real art of demagogy which is understood and practised by the leaders of democracies and which considerably tempers the latter. It is, of course, an art of deception, which induces the masses to fight to make the world safe for democracy, with the results we behold today; but it is a real enough art, nevertheless. It will be the aim of this article to divulge the operations of this art, to show to what a farce it succeeds in reducing real democracy, and to indicate what must be done if democratic forms are not to be superseded as illusory and intolerable.

To explain the workings of this art, however, it will be necessary first to clear up the notion of democracy. Democracy is not the government of the people by the people for the people, as the people are so often told. In the more advanced democracies it is more nearly a government of the people by the politicians for the politicians; but it is at any rate a form of government. As such it competes with other forms of government and seeks to justify itself by claiming to provide better government. It has advantages and disadvantages; and what it concerns the people, or at any rate sensible people, to know is whether it yields the best government that can be got. Now among its advantages is that it is as a rule a great help to a ruler to ascertain in advance how people are disposed towards his measures; so it is well to consult the people and to shape one's course accordingly. Moreover, as has sagely been remarked, it is better and easier to count heads than to break them.

Every government, it is true, obtains a certain measure of popular assent; otherwise it does not endure at all. But this assent is often implicit and passive, or only apparent, especially in countries where the people are not consulted or their consultation is a sham. Hence it is a real advantage of the democratic form of government that it presupposes and demands a much more active assent of the governed. A democracy cannot be a success unless the masses are actively interested in politics and determined to obtain good government. Where these conditions are not fulfilled, there is nothing in democratic forms to prevent democracies from sinking very low in the scale of values.

Now the political principles upon which all democracies, both ancient and modern, have been based are two. In the first place, the sovereign people does not govern, but others govern it, either by force or by guile. It is therefore sovereign only in name. Secondly, the Minister, or manager, of the sovereign people, if he desires to put through the measures he judges good, must distract and more or less deceive the people. Wherever the

people have political power enough to be worth conciliating, the actual rulers must keep them contented and amused. Even the Roman emperors found it expedient to provide *panem et circenses* for the mob of Rome, or, in modern parlance, a dole and race meetings. He has, of course, far more powerful agencies at his command to work upon the public mind than ever the ancients had. Thanks to the radio he can address the whole world. Thanks to the press, he can daily indoctrinate the people with what he wishes them to believe, without their suspecting the source alike of their views and of their beliefs.

The "skilled rulers," the bureaucrats, have failed politically, and have proved unequal to carrying on the traditions of the ancient statecraft; the demagogues, or bosses, who manipulate "democratic" institutions may also claim to be experts in this very field. Moreover, during the war they exhibited a much greater degree of astuteness and adaptability and contrived to carry on successfully. Since then, however, they have shown almost total incapacity to understand post-war problems, which are mainly economic. From ignorance and stupidity they have made a great mess of world economics and seem to be quite incapable of mopping it up. Now they are showing signs of reaching the end of their tether. Their incompetence has not only thrown the whole social order into confusion, but it is also beginning to endanger their own necks. In consequence, democracy is manifestly waning all the world over, and a desperate demand for dictatorships is growing up. Dictatorship is, of course, an old and familiar resort of desperation, and its future is predictable. What is not so predictable is the future of democracy. Can our so-called democracy be restored to efficiency and health? Is a real democracy conceivable at all? And what must democracy do to be saved? The great bureaucracies had all succumbed, and it was supposed that the world had been made safe for democracy and its bosses. For a while it really looked as though the art of managing democracies had made such progress since Abraham Lincoln's day that, even though it was not yet possible to fool all the people all the time, it had become possible to fool all that mattered, that a sufficient variety of week-end "stunts" would tide a Government over any crisis, and that a sufficient supply of ambiguous formulas would solve any problem. But, alas, it presently appeared that hard economic facts could not be conjured out of existence by the most seductive rhetoric and that they had the power to expel from their fools' paradises even the most ardent believers in worlds fit for heroes. The heroes found themselves unemployed in growing masses, and the doles conceded to them by their rulers' fears had presently to be cut. And in spite of desperate attempts to protect national standards of living by tariff-walls, every country found itself sinking deeper and deeper into the common slough of a world-wide depression.

The political consequences of such a state of affairs were not slow to show themselves. Rightly and wrongly the peoples blamed their rulers for their distress. So they rose up and changed them, repeatedly, everywhere, but found that *plus ça change, plus c'est la même chose*. None of the ordinary methods of political change, not even the South American method of armed rebellion, seemed to afford relief. So there has arisen a widespread disbelief in what is called democratic government. Democracy is everywhere on trial and even the demagogues are beginning to be in danger of their lives. Parliamentary government is breaking down and ceasing to function or being reduced to a show and a sham.

Superficially this movement has led to a great development of dictatorships, mostly military and everywhere resting upon force and violence. In Russia, Italy, Jugoslavia, Hungary, Turkey, Portugal, Lithuania, and now Germany and Austria, the dictatorship is blatant and avowed; in the United States, Greece, Spain, Bulgaria, Czechoslovakia, Finland, Rumania it is more or less cloaked in constitutional forms. In Europe parliamentary systems linger on only in Britain, France, Belgium, in the Scandinavian countries and in a few minor States that escaped the shocks of the war by remaining neutral; but, even in these, parliamentary government can be carried on only by coalitions. The whole situation seems a most humorous comment on a war that was most plausibly said to be fought to render the world safe for democracy! Dictatorship is a revolt against democracy and represents a twofold reaction against it. It is a return, on the one hand, towards the personal ascendency of personages like Lenin, Mussolini, Pilsudski, Hitler, Roosevelt, Kemal, Horthy, Carmona, Venizelos; on the other, it means a return to bureaucracy and the revenge it takes on democracy. For all dictators rule with bureaucratic support in the army and the civil service, and even the dictatorship of the "proletariat" soon becomes (in fact) a dictatorship of the "secretariat."

Moreover, elsewhere also bureaucracy is taking its revenge and undermining the democracy. Although the demagogues won the war for their democracies, it was the bureaucracies which gathered in the fruits of victory. They enormously extended their numbers and their powers by increasing the amount and intricacy of State regulation and organization and consequently, of course, the expenses of the civil service. (A typical example is the preservation everywhere of the farcical but irritating passport system.) Thereby they rendered themselves so indispensable to their official superiors, the demagogues, that they may be said to have subjugated them and reduced them to puppets. Securely screened behind a *façade* of popular government, they now rule irresponsibly in the name of the people and the Ministry. In most "democratic" countries parliamentary government is becoming more of a farce every year, especially in Britain.

Every year a hidden bureaucracy, as Lord Hewart has so well shown, encroaches more on the functions of the Legislature and of the nominal Executive and persuades them to delegate to it their powers. The bureaucracy wields its power by the methods by which capable subordinates have always controlled incapable superiors.

If an ostensible ruler is ignorant or lazy or greatly inferior to his Ministers in intelligence, it is psychologically inevitable that he should always, in the long run, be controlled by them. For it is for him the path of safety and least resistance—nay, his only escape from overwork and death—to do as he is told and not to ask unnecessary and inconvenient questions. But if he is obstreperous and too inquisitive and wants to know what is done in his name, there are plenty of well-tried ways of taming him.

Needless to say, such methods are applicable also to the sovereign people. There is nothing in its status to protect it from such trickery, which is practised in this case by the co-operation of the bureaucrats and the politicians. Though all the forms of deference may be preserved, the "people" is an easy victim. For collectively the sovereign people is just as Plato described it in the *Republic*—well-meaning, but ignorant and stupid. Being ignorant, it does not know enough to decide the complex questions on which its prosperity depends—let us say of the gold standard, of tariffs, and of foreign policy. Being stupid, it could not understand them if it tried. Being lazy, it is bored by them, and does not try. Being amusable and easily diverted, its attention is easily absorbed by the distractions which the press and the cinema so lavishly provide [a very pack of Alcibidean hounds] with the instigation and approval of the demagogic government. Really the poor sovereign people has as little chance of exercising an intelligent control over public affairs as the stupidest of Tsars.

Again, consider the mechanism of consulting it, an appeal to the people. A general election takes place when a Prime Minister dissolves Parliament. Naturally he dissolves it at a time which suits him and his party best, when he thinks he can put before the voters an issue they will understand and about which they will agree with him, so that he may be returned to power. But for the same reasons his opponents will endeavour to confuse the issue by bringing up other points. Neither party lays all its cards on the table; and as often as not the electorate is stampeded at the eleventh hour by a lie or a half-truth which constitutes a successful "ramp." When the whole hubbub is over no one can tell with certainty what the people really voted on and willed. If the appeal to the people takes the form of a referendum on legislation already passed by the Legislature, it is easy to discredit it by submitting it in a form so complicated and obscure that the voters cannot understand it, or suspect some trickery; while the whole attempt to obtain direct popular sanction for legislation may be

frustrated by referring any thing and everything to the voters, until they cease to vote or reject all the laws submitted to them in disgust. In short, the principle of democratic government always is that by hook or by crook the people must be deceived, whether it wills it or not.

When one considers, further, the ways in which plutocratic influences percolate into "democratic" governments and politicians are bribed by, and blackmail, business interests, one realises how easily democracy may be degraded into a sham. This lesson may still be learnt most easily from transatlantic politics, and both prudence and the facts admonish us to seek our illustrations overseas; but it would be folly to think that British political human nature can permanently remain immune to the temptations, for example, of tariff legislation after we have established tariffs. The leading instance of the relations of business to politics is still the famous reply of Jay Gould to the committee of the Senate that was investigating him. When asked about his political opinions he candidly replied: "I am a Republican in a Republican State, and a Democrat in a Democratic State: but I am an Erie Railroad man everywhere." The late Mr. Ivar Kreuger had evidently adopted the same principle. It has the great advantage of securing business against political interference whichever party is in power. In many cases, however, it remains in doubt whether such transactions are better described as a bribing of a politician by a plutocrat or the blackmailing of the latter by the former.

In England, however, we are as yet more timid or more decorous. Our party chests are replenished more cheaply and more innocuously than by legislation which enriches generous subscribers to the party funds. The party which controls the fount of honour, rewards and ennobles its "public services" by titles and decorations, so it is difficult to see how party government could be carried on if the House of Lords were abolished. Evidently, also, our British method is far more salutary in the public interest. But it is clear that everywhere a true democracy presupposes incorruptible politicians. And if you multiply temptations and abolish all but pecuniary rewards, how long can you fairly expect your politicians to remain incorruptible?

In spite, however, of occasional ugly symptoms, it is not corruption that seems likely to lead to the overthrow of our democratic bosses. It is rather their sheer incompetence and inability to carry on government by their ancient methods; or, more specifically, their incapacity to understand the intricate economic relations of modern societies, and, above all, their cowardly shrinking from leadership and courtly reluctance to tell King Demos unpalatable truths. It was not to be expected, of course, that our demagogues should themselves understand all the economics of banking and exchanges, of industry and international trade. They had, however, the advice of plenty of technical experts, by which they might have been

guided. But all the indications are that they did not take good advice, because they had not the intelligence and the knowledge to understand it.

Nor had they the courage to divulge to the masses they had so long doped with war propaganda that all this sort of thing was now out of date and must stop, that the orgies of nationalism were too costly and must cease, and that the attempts of every State to live for and by itself were the road, not to safety, but to poverty and ruin. No politician even yet has dared authoritatively to tell his people that for all the world to try to increase exports by strangling imports was a flat impossibility; and nowhere, probably, do the masses yet understand this. It was a lack of courage also that prevented a clean and speedy settlement of the war and left impossible war debts and reparations to linger on and to poison normal international relations for decades.

For all these blunders the penalty will have to be paid. It is already being paid by the peoples, but their rulers or managers will not escape. This is the meaning of the drifting away from democracy to dictatorships and other monstrosities of political organization. And if the bosses desire to escape with whole skins, it is high time that they mend their ways and give their earnest thought to a real reform of democracy. If we define democracy as a form of government in which all the people are genuinely consulted by the rulers before they do what they think best, it is clear that such genuine consultation is rarely found in fact. For the consultation of the people in so-called democracies is more often illusory and fraudulent. Indeed, the same *apologia* may well be made for the failure of democracy as for that of Christianity and of Prohibition: "democracy has not failed, because it has never yet been truly tried!" Of course, the reason is the same in all three cases. Democracy is difficult. It is a form of government which demands the existence of a vigilant, intelligent, and instructed public opinion, devoted to politics and actively interested in public affairs, which is resistant to dopes and distractions and determined to learn all that is necessary to form an intelligent judgment about public questions. Moreover, a truly democratic government is one which should require and obtain the active support of such public opinion.

It is, however, pretty clear that this ideal is nowhere realized. Actual democracies fall far short of it. They might, however, come much nearer to it, if only they could purge themselves of sundry weaknesses and defects. The chief obstacles to such a purge are the existing politicians, without distinction of party. For it seems a natural consequence of human psychology that when a political system is well established and thoroughly understood by the politicians who work it, they all get so used to it and so fond of it that they become extremely reluctant to introduce any changes into its essential working. They prefer to play the familiar game and refuse to

change its rules. That some of them may call themselves reformers and even radicals makes no difference; though willing to reform others, they will not want to reform themselves and the rules of their beloved game of politics. This is why politicians not only will not devote any thought to the mechanism of politics but also are always indifferent or hostile to any really democratic reform which aims at improving the expression of the people's will and the effectiveness of the political machinery.

To illustrate. It is notorious that in most countries the methods of election do not give the voters a fair chance of expressing their will, while democratic constitutions teem with artifices for frustrating it. The countries in which the electoral laws are such that parliamentary representation can reflect popular opinion can be counted on the fingers of one hand. And even where the laws admit of this possibility, their administration usually frustrates it. The only clear exception known to me is Switzerland, which is also the only country in which there is no political discontent, because majorities do not attempt to oppress minorities. Now this frustration of the people's will brings with it many evils. It not only subverts the central idea of democracy, but produces discontent and tends to revolution and rebellion. And even where it does not, it leads to a political instability which renders continuous progress difficult. A single illustration from our own country will probably suffice to make this clear. We are at present[1] blessed with a National Government, which was forced upon our politicians by the desperate mess they had got us into, and which is proving more stable than most of us expected. But under our present electoral laws it cannot last longer than five years. After that, quite regardless of the Government's record, many voters will feel that they would like a change and will set the pendulum swinging again, whereupon our social order may be thrown into the melting-pot, and chaos may come again!

Yet all this danger of instability is a consequence merely of our gross system of misrepresentation and of the conservatism and stupidity of our politicians in refusing to amend it. There is not really in the country a majority for revolution, and in all probability never will be. But there is considerable probability that we shall blunder into revolution, owing to the unfairness and fatuity of our electoral system. It is a system which will not represent minorities, which eliminates moderate opinions, and which forces any voter who dislikes an extremist government and wishes to get rid of it to vote for their opponents who may be equally extreme and dangerous. Actually there exist at present some millions of Liberal voters who are unable to elect any but a very few representatives; so that in the Commons their intermediate opinion, which actually holds the balance in the country between Conservative and Labour, goes for nothing. There are also suppressed minorities in the two larger parties, Conservative Free-traders,

moderate Trade-Unionists, and the like, who might beneficially influence their party policies, if they were not suppressed by the party caucuses. And there are a number of honourable and independent voters who are not allowed to express disapproval of one Government without being taken to have expressed approval of the Opposition.

Now all this is a wholly artificial and unnecessary consequence of our pseudo-democratic electoral laws. It would be quite easy to change it by simple and slight changes in the electoral machinery. It would be quite easy to make the consultation of the people a reality and to obtain a House of Commons that would really and adequately express the opinion of the people. With three parties it is theoretically possible, under our present system, for a little over one-third of the voters to elect the whole House of Commons! And the politicians are well aware of it. Only it does not suit their book; and they will do nothing until they are compelled by outside pressure. In the hope of putting on a little of this pressure and in the interests of a genuine democracy I will enumerate a few simple and urgent reforms of the present system.

First there is proportional representation. This is a well-known and well-tried system of permitting the adequate representation of minorities. It is capable of representing minorities of any size with the utmost accuracy: it is merely necessary to enlarge the constituency in order to grant representation to a smaller minority. It is also perfectly simple to vote: the voter has merely to mark his preferences among the candidates 1, 2, 3, et cetera, and to abstain from marking the names of those he does not wish to see elected. Every schoolboy who enters for a combined scholarship examination shows himself capable of this feat. Its political consequences also are well known. It eliminates "tidal waves" and violent "swings of the pendulum," and substitutes for huge homogeneous but caucus-made parties a number of groups that shade off from one extreme to the other. They cannot be ordered about by the leaders of the biggest groups and so are less convenient to handle, but they accurately reflect the opinion in the country. The absurdity of arguing that proportional representation would mean a succession of coalitions, and that coalitions cannot govern, is sufficiently confuted by the present situation. Also the system has some convenience even for party leaders: they cannot be deprived of their jobs by losing their seats in a tidal wave. For, each one being the first choice of his party, they are sure of election as minority representatives. Proportional representation has shown itself a means of political stability in most countries, except Germany, where it has been tried; it has prevented the triumph of Socialism in Switzerland, it has given Ireland ten years of breathing-space, and even now it puts a check on De Valera.

Secondly, the negative vote is deserving of mention. There is no reason in the nature of things why this should not be permitted, and its political

effects would be very salutary. The negative vote means merely that a voter can vote directly *against* a candidate as well as *for* him, with the consequence that his vote cancels a positive vote. Negative votes might also be made transferable, like positive votes under proportional representation. Thus, if a bad candidate had already failed of election, the voter's negative preference might be transferred to the next most objectionable name on the ticket.

A system which permits a voter merely to vote *for* a candidate is too simple to express all that is in his mind. It is psychologically crude. There are psychological gradations of approval and disapproval which he is not allowed to express. But these differences could be expressed, and it would be to the public interest that they should be. The defective mechanism of the electoral laws alone stands in the way. The negative vote would remove some of these defects, and the transferable vote under proportional representation would remove another. For it would enable the voter to state his second and third choices as well as his first.

I will mention next a simple little reform which would, presumably, be passed by acclamation, if any Government could be induced to propose anything so unheard of and so sensible. For it would benefit all parties and the public service as well. Ministers should have the right (as in many other countries) to address either House, whether they sit in it or not. This little reform would relieve the Liberal and the Labour parties of frequent embarrassment in finding suitable, adequate, and trust worthy spokesmen in the Lords and would enable the Tories to utilize their surplus strength in that House. It would also be in the public interest, because it would become possible and customary to confer upon members of the House of Lords such public offices as seem to require a Minister's undivided attention or require to be screened from the attacks and distractions of the Commons.

The reform of the House of Lords is a much bigger affair. Quite apart from the general desirability of constituting a real aristocracy and of giving the best minds in the country an influence on public affairs, it is an urgent political need to construct an effective check upon such a House of Commons as we have under our present system. We have seen that owing to its mode of election it is inevitably a product, not of the considered opinion and political wisdom of the Nation, but of a fit of electoral hysteria. It is never representative of the actual distribution of political opinion. It grossly exaggerates majorities and suppresses minorities. Its majorities are artificial creations and mostly the outcome of the desperate struggles of negative voters to rid themselves of an intolerable Government: they swing from one extreme to another, because the voters speedily discover that its successor is no better. Finally, the House of Commons is an unwieldy mob which would be far more businesslike if its numbers were halved. Alto-

gether, it is a marvel that it has not yet completely discredited democracy in the eyes of intelligent people.

But it is no wonder that its real power is rapidly waning and that it is sinking into a cumbersome machine for registering the decisions of any Ministry which has a "safe" majority in it. The misfortune is that this Ministry is always deluded. It imagines that it has the support of the country and that it can retain it by passing good or popular measures. But as a matter of fact, whatever it does, the swing of the pendulum which generated it is certain to sweep it away again at the first opportunity. Hence no continuous or far-sighted legislation is possible on matters which are involved in party politics. All these evils are consequences of our grotesque system of misrepresentation. They jeopardize the future of parliamentary government and, indeed, of democracy itself. But it is easy to see how to reform them: they could probably be cured by the expedients we have mentioned.

But there are other evils at present afflicting us which are not so easy to cure. The world's economic ills, for example, are not to be cured by Democracy or Communism or any other form of government. No effective remedies can be applied to them till the masses everywhere are made to realize that they have been attempting economic impossibilities and repent them of their folly; at present they are still crying out for "less bread and more taxes," like the mob in Lewis Carroll's *Sylvie and Bruno*.

But a complete solution of the economic problem may need more than a return to economic sanity. It may need more than the establishment of a genuine democracy freed from frauds and trickery. And both may require something more, and better, than we get at present in the shape of human material; both may require a change in the policies by which this material is now provided. For it is a tragic fact that in all existing civilized societies the recruiting mechanism has gone astray. They no longer recruit themselves from the better, brainier, more efficient and successful strata of their population, which do not reproduce their numbers, but from the inferior, the feeble-minded, and the incapable. These are kept alive by social support and enabled to multiply by social protection—at the expense of the classes able to pay taxes which are becoming more and more excessive, because of the prodigious waste of public money on all sorts of social follies. So we organize "baby-saving weeks" for the worse babies instead of "better babies exhibitions." The biological consequence of these fatuous forms of social interference is inevitably the progressive deterioration of the stock. How far this deterioration has already gone is, for a variety of reasons, hard to determine. But it is not hard to predict its political consequences. It is rendering liberty and genuine democracy unworkable and a relapse into some form of despotism certain. It means, also, the doom of civilization, unless an intelligent policy of eugenical reform can speedily be started.

NOTE

1. Written in 1933.

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ANT-MEN OR SUPER-MEN?

Hardly any one nowadays is likely to deny that man's nature—that is, his spontaneous tendencies to feel and act—is profoundly social. The disputes about man's destiny and prospects begin only after this obvious fact has been admitted, and when the question is raised to what sort of society his social nature can, or should, give rise. Moreover, a little reflexion will show that the sides men take in these disputes are determined largely by the ways in which their convictions about man's social nature have been reached. Those who have taken the high a priori road and argued from metaphysical essences and necessities of thought will naturally find themselves a little wearied by their arduous journey and disposed to view man's social nature as a resting-place and end, after reaching which they are disposed to think all will be well and nothing more need be said or done. In consequence their contributions to the problem of man's future are apt to be nugatory. Those, on the other hand, who have followed the empirical way of biological science will easily apprehend that the need for society rests on the simple fact of individual mortality: they will also realize that the problem of the relations of the individual to society is capable of an indefinite number of solutions, among which it is incumbent on us to choose the

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Our Human Truths (New York: Columbia University Press, 1939), pp. 251–268.

best. Accordingly man's social nature will appear to them, not as a terminal, but as a starting-point, from which there radiate many alternative policies and programmes for the future development of man.

It will not, however, seem feasible to discuss the future without reference also to the past. For it should never be forgotten that man's present nature is the resultant of a long historical development, which has knit together his nature in all its details. Nor can one overstress the fact that he is not merely a social being in the abstract, as might be inferred from the disquisitions of most philosophers: he has acquired a specific sort of sociality by leading a special sort of life in the specific history of the race. Hence it means little and explains nothing merely to proclaim him a social being; but it is highly relevant to know how he acquired his present habits and organized his existing institutions. His laws, his customs, his manners, his religions, his morals, his failings, his temptations, his crimes, nay even his diet, all have a bearing on his social nature and have gone to mould it. They must all be studied historically in order to understand what he has become.

For example, it would be possible, as the late Professor Carveth Read has shown,[1] to write the whole social history of man in terms of the successive revolutions in human food supply. To begin with, man (or rather his ape-like ancestor) must have been (as the structure of his teeth still testifies) a good vegetarian, who lived, like the gorilla, on the fruits and shoots of a tropical forest, necessarily in small bands or families that ranged over large areas for their sustenance. Then the climate deteriorated in their forest home and winters grew up in which vegetable food became scarce. This change confronted the ape-men with a choice between extinction and the adoption of another diet. They preferred the latter alternative and became carnivores. They decided, further, to prey on the big beasts of the forest and the prairie rather than on the smaller fry. After that they had to change not only their physique, by coming off their forest perches (again like the Kivu gorillas) and becoming agile on the ground, but also their social habits. They had to organize themselves into packs of hunting wolf-apes—that is, of apes who had adopted the methods and acquired the mentality of wolves—to gain their livelihood. Carveth Read very acutely pointed out that this inferential history explained a number of oddities about man's social nature. It explained why human mentality is that of the pack, in all its atrocity, rather than that of the herd. It explained why socially men are able to combine to attain a common aim, but are very apt to quarrel immediately afterwards over the division of their booty. It explained, lastly, why the once vital instincts of the hunter and the fisher had been reduced to "sports" and continued to be indulged in at great cost, even though they have ceased to be necessary or even profitable under modern conditions.

After they had thus lived precariously as hunters for ages, an original

idea occurred to men—as it did to ants. Why not intervene in the course of nature so as to domesticate and secure their food supply? Thus the livelihood of the hunter was eked out and finally superseded by the domestication of animals and plants; and with that arose two new ways of life: the tending of tame animals, the pastoral; and the tilling of the soil, the agricultural. So the herdsman and the agriculturist rendered the hunter obsolete. The consequent addition of milk, butter, eggs, grains, and vegetables to human diet not only turned man back again into a vegetarian (in the main) but also had far-reaching effects upon human politics. It enormously increased the numbers of mankind and the density of population a given area could support, and it divided the tribes of men into nomads, who drove their herds from pasture to pasture according to the season and lived a varied life with a good deal of incident and leisure for reflexion, and the plodding agriculturists doomed to unceasing toil, who were practically *cripti glebae* and tied to the soil they tilled.

So a contrast and a conflict soon arose between Cain and Abel; but (contrary to Scripture) it was Abel who usually proved himself the better man and became top-dog. For the nomads' mode of life was intellectually more stimulating and more conducive to the growth of leadership. Also the nomads were better and more mobile fighters who carried their food supply with them on their raids and could therefore gather in greater numbers to overwhelm the little strongholds of the agriculturists. So the leaders of the nomads overran the settled districts and founded nobilities and dynasties, which fostered civilizations and grew into empires. These they could administer with the aid of priestly castes that had from the earliest epochs cultivated knowledge, real or imaginary, as the avenue to power. It is pretty plain that the earliest science was conceived as an aid to agriculture, being astronomical in order to determine the length of the year and geometrical in order to measure out fields annually inundated by the fertilizing floods of rivers like the Nile and the Euphrates, the Ganges and the Yangtze-kiang. It would seem, also, that the earliest art, the paintings which adorned Mousterian caves, was essentially food magic and the work of men who had devised this way of sharing in the spoils of the chase without incurring its dangers. In some such ways, we can aver with growing confidence was human nature moulded and did human civilization grow.

But can we detect in this history any law of progress? If we could, we might, by observing it and conforming to the requisite conditions, secure the indefinite continuance of progressive change. But as yet the achievement of progress (in the sense of change for the better) seems so rare, so haphazard, so contingent that we cannot formulate any "law" for it that will guarantee it inevitably and apart from our efforts. We cannot even assign to the possibility of progress any very deep roots in the nature of

things. We have to content ourselves with observing under what conditions the progress we recognize seems to have occurred.

It would then appear that one main condition of progress is a proper balance between the forces of conservation and of change. An excess of either is ruinous. Too much conservation means failure of adaptation to new conditions, fossilization, and destruction. On the other hand, too rapid and revolutionary a change also means destruction by social disintegration and the deliquescence of social habits.

We may inquire further by what means a society can equip itself with sufficient amounts of conservation and of change. As to the former there is no great difficulty: the force of habit alone can be trusted to conserve an established order. Moreover, quite a moderate amount of fairly low-grade intelligence, such as the bureaucratic expertness of an experienced official, will suffice to carry on affairs in an established routine. But to change with safety and advantage involves a creation of the new and its adaptation to the old; whence is the new to come, and how is it to be adapted to the old? Both originality and skill are needed, and the former is the rarest of human qualities.

It is a quality which occurs in only a few individuals. Every novelty that has enriched and improved the world has originated in an individual mind and started its career in a minority of one. In consequence, its hold on existence is very precarious at first, and it is the rule rather than the exception for it to be strangled at birth. There is then nothing for it but to wait until it reincarnates in another individual mind, more potent or more favourably situated to make itself heard. In the most favourable event, a novelty can survive only if it takes birth in a society which contains a number of other minds who, though not capable of originating it themselves, are well disposed towards novelties and willing to try them. These form the natural raw material for Liberal parties everywhere and in all subjects. Contrariwise, it is from lack of a favourable social environment that so many discoveries have to be made over and over again and do not win recognition until the obstructive conservatism that suppressed them begins to feel that after all they have become familiar and no longer offend too glaringly against the principle that there is nothing new under the sun!

But no society has yet recognized how vital it is to its prosperity and continuance that it should refrain from suppressing innovations on general principles and should organize itself so as to give them a fair trial. Nor has any society adequately recognized the debt it owes to the individuals who have saved its existence by adapting it to new conditions or by inventions that improved its adjustment to old conditions. Historians also have greatly underrated the role of invention in determining the course of events. It has been generally assumed that the supply of salutary innovations would never fail.

Nor, strange to say, has it failed so far. Thanks to some strange luck, fatality, or providential guidance, the necessary innovations have always been forthcoming. All through history human originality has made discoveries and initiated progress. Some of the earliest of these were the most difficult and the most important. Thus in all mythologies the discoverer of the art of making fire has ranked high among the gods or heroes. The inventor of the wheel is not so famous, but he must be credited with the only human mechanism to which nature had provided no obvious clue.

Thus the problem of judicious innovation is the real crux of human progress; conservatism and stability must be supplemented by an intelligent Liberalism. If now we analyze the idea of Liberalism as a social ideal, we shall find that it comprises two aims. The first is to maximize freedom and to develop individuality to the utmost, meaning by freedom the permission to do as one pleases, minimizing social coercion and resting government on the free consent of the governed. Secondly, Liberalism stands for the policy of reaching social agreement by reasonable discussion or debate rather than by authority and force.

Both these ideas of Liberalism go back to the Greeks, especially to Athens, and in both respects the nineteenth century appears to represent the high-water mark of Liberalism. Since then it has been ebbing, at a growing and alarming rate, for reasons we shall presently consider. But the vicissitudes of its popularity cannot affect the psychological fact that Liberalism is as natural and as deeply rooted in human nature as Conservatism and trust in routine.

The Conservatives and the Liberals, then, are the two great parties into which human society is naturally divided; in spite of their contentions both are necessary to human progress. Indeed, so much is this the case that in a well-ordered polity it will often seem that each party is driven to play the other's game and practically joins it in directing the smooth course of progress. For example, in England, before the war, the balance of the forces of conservatism and of progress was normally so perfect that it seemed as though neither party could realize its programme except with the aid of the other and through the agency of a Government belonging to the opposite party, because only then would the normal inhibitions to it be withdrawn. It used to be said that only a Conservative Government could pass a radical reform and only a Liberal Government could plunge the country into a great war. Hence it was that feminine suffrage and Irish Home Rule were conceded by Parliaments which contained large Conservative majorities, while it was the Liberal Government of Asquith and Grey which got entangled in the foreign policies that ended in the catastrophe of 1914.

This catastrophe seems to have pretty well proved fatal to Liberalism all the world over. War is naturally adverse to Liberalism, because it substitutes

violence for reason as the method of settling international differences; but, still, even the Great War need not have proved the death of Liberalism. Its demise looks more like a case of murder than of natural death. For it was chiefly due to the actions of three eminent statesmen who controlled the destinies of the world after the war. All three professed Liberalism, and all contributed to its destruction, when by adopting another attitude they might easily have brought about a triumph of Liberalism and launched the world on a career of unprecedented progress.

But, unfortunately for mankind, President Wilson was more of a pedant than a philosopher, while M. Clemenceau was more of a nationalist than a Liberal and a hater of his enemies rather than a lover of mankind. As for Mr. Lloyd George, he was essentially an opportunist, who discovered too late that Liberal catchwords suited his style of eloquence far better than did those of Conservatism or of Communism and that his amendment to Abraham Lincoln's *dictum* that one cannot fool all the people all the time—namely, that if one is clever enough one can fool all that matter—did not in the long run apply to a party leader who had split his party to gain his position and delivered himself into the hands of his enemies in order to escape from the vengeance of his former friends.

So it first of all became too difficult for Liberalism to withstand the tide of Nationalism. Everywhere a narrow and bigoted conception of nationality broke up not only the political but also the economic aggregates that were essential to human civilization and prosperity and forced mankind back into barbarisms, follies, and superstitions that it seemed to have outgrown long ago. It was a signal example of the bitter irony of history that a war which had been ostensibly fought to render the world safe for democracy should lead not only to a widespread abandonment of democratic institutions, but also to a state of affairs in which there was no safety for life, property, or justice and to a recrudescence of personal rule in its most ruthless and tyrannical forms.

As this ebbing of Liberalism seems likely to continue, and Liberal sentiment seems to be merely stunned by the course of events and unable to understand and resist its causes, it may be well to carry our analysis a little further.

Deadly as had been the betrayal of Liberalism by its leaders in the peace treaties, it might have recovered from the blow if strong leadership had been forthcoming in the triumphant democracy. But parliamentary politics seemed to be overtaken everywhere by a sort of paralysis. Innumerable conferences and endless talk led to nothing or worse than nothing; and yet nothing seemed to shake the complacency of democratic politicians and their conviction that all was for the best in the best of all possible worlds. They appeared to be quite blind to the loss of public interest in their pro-

ceedings and of public confidence in their methods. They could see nothing beyond the futilities of party politics and did not understand what was meant by the successive revolts against the debating-society theory of government. They continued to imagine that the voters would continue to be satisfied by periodical elections and did not observe their growing impatience with constitutional forms that had been debased into shams powerless to relieve either the discontents or the distresses of the people.

So revolutions alike in the theory and in the practice of government became the order of the day. Dictatorships took the place of parliaments in one country after another. They were easy to establish wherever a picturesque personality was available.

Bolshevized Russia led the way. Its dictatorship was called that of the Proletariat, but was actually that of the Bolshevist leaders, Lenin and Stalin, who organized their party despotically and suppressed all other parties. They organized also an elaborate propaganda aimed especially at enthusing and enthralling the young and the ignorant and turned their Communism into a sort of religion. But they took care not to change the actual mechanism of government, the system established in Russia by Ivan the Terrible, and they ruled by open force and secret police, like the Tsars. They disavowed the private profit motive as the inducement to industry; but the necessities of their situation are forcing them to revert to compulsion and to re-introduce a still earlier device—namely, forced labour, serfdom, or slavery.

Italy, in Mussolini, has produced the most capable of dictators; Spain, the feeblest, in Primo de Rivera. Mussolini showed remarkable skill in appealing to the dramatic sense of the Italian people, and Fascism may be said to have evolved a political theory of sorts.

Germany, in Hitler's National Socialism, has apparently the maddest of all the dictatorships, based on the pseudo-science of fantastic race theories and the barbarism of anti-Semitic *Juden-hetzen*, which before the war were confined to Russia, but have since been steadily coming further west, and the hooliganism of perpetual brawling and an unofficial civil war.

Nevertheless, it is not safe to argue from the initial antics of dictators at the beginning of their careers to the final character and effect of their rule. They have to rise to power by adapting their programmes to popular follies and frenzies and rendering it palatable to the meanest intelligence. Like democracy, but far more directly and forcibly, they rest on an appeal, not to the *intelligentsia*, but to what may be called the *unintelligentsia*. But when they have consolidated their rule, they no longer need the crudities of castor oil and the manganello, though they must still provide *panem et circenses*. So even Hitlerism may outgrow its anti-Semitic barbarism and its "Aryan" racialism and find itself compelled to return to its allegiance to *la*

haute finance and to make its peace with Jewry. Even now it must be credited with a firm and much-needed stand against sexual laxity and degeneracy in Germany and with setting a truly scientific example by recognition of the social need of eugenics. This in the long run may turn out to be the most important and beneficial feature in its programme.

The political justification of the modern European dictatorships is everywhere the same. It is to be found in the social chaos to which excessive war, frantic nationalism, the upsetting of stabilizing habits and customs, the defiance of economics, and the oblivion to morals have reduced the unhappy populations of that continent. This chaos the traditional methods of parliamentary democracy, corrupted as they everywhere are by political trickery, are manifestly unable to abate. Hence, in their desperation men are more and more attracted by devices which promise them relief in a more rational and planned order, which can be established speedily by main force, without the tedious delays and constant frustrations interposed by parliamentary oppositions, party intrigues, and long debates. The dictator is the ideal man who can remould the world nearer to the heart's desire of multitudes, even though he has to shatter much of it to bits in the process.

But those who feel thus fail to realize that our chaotic social conditions are largely a reflexion of the chaos existing in the individual soul. One great truth underlying our distresses is that we are not fit at present for any less chaotic social order than our own. It is idle to talk of planning, of Socialism, or of Communism while the extant human mentality is an unescapable presupposition of all attempts at reform. We do not possess at present the men who can plan successfully, as President Roosevelt's well-meant efforts have amply shown, nor the men who are willing to work Socialism and to work under it, nor the men who are willing to live communally. All these sorts of men have to be grown. But it will not be easy to grow them, and as yet far too little thought has been given to the problem of growing them.

Dictatorship, however, is not only an ideal. Like Democracy, it is also a form of government, and the aims of dictatorships may differ. While they all agree that a strong and authoritarian government is demanded by the emergency which enables them to arise and while they may seem to agree in the doctrine of a totalitarian State, they may yet differ widely in their conceptions of the nature of the life they desire to produce and of the men they desire to populate their State.

Actually these differences are already quite marked. They are all proclaiming the need of unlimited sacrifice from the individual citizen; but the kind of man wanted in a Communist dictatorship like Russia is plainly very different from the kind of man wanted in Fascist Italy or Hitlerian Ger-

many, and none of these dictatorships would be content with the merely servile masses submissive to financial exploitation that would satisfy the requirements of South American dictators.

In each of these cases the citizen is required to be relative to the constitution under which he lives and to be adjusted to it. But the root of all political troubles and discontents is that in point of fact he is not. The average man of to-day is not such as to fit into any of the revolutionary schemes; he does not make a good citizen either in Russia or Italy or Germany. He is not even willing to submit any longer to exploitation by the despotic dictator or tyrant, though for ages he has been more nearly adapted to this ideal of dictatorship than to any other. As for the man who would come up to the communist ideal or that of Mussolini or Hitler, it is safe to say that at present he does not exist on earth. Hence every dictatorship intelligent and convinced enough to wish to perpetuate itself is confronted by the problem of remoulding human nature. It must breed, or some how mould, the sort of man it wants, the man who would be fit for its purposes, would believe in its ideals, could enjoy life in it, or could at least endure it. At present such men hardly exist—at any rate, in sufficient quantities. But it is conceivable that they may be grown, and it will be instructive to consider how the various dictatorships would set about the task of growing them.

Let us take first the communistic man, adapted to a communist State. He is easy to delineate, not so much because he may already be coming into existence in Russia, but because the problem he presents to his makers has already been solved, in all essentials, by the social insects. From the communities of the ants, bees, and termites we can gather what must be the qualities of communistic man, whom we may henceforth call the "Ant-man." He must be infinitely labourious, self-sacrificing, and submissive to his social order. Moreover, all these social qualities must be so ingrained in him that they have become unquestioning and instinctive and that he performs his social functions willingly, easily, and without demur or friction and approximates to the ideal of an efficient and trustworthy social automaton. If he can attain to this degree of adaptation he will not need the motives which have hitherto driven men to labour, either the lure of personal wealth or the lash of the slave-driver. He will be impelled to work by his own nature, without any *arrière-pensée* of any sort, without hope of private gain, and without fear of the whip. Similarly, he will sacrifice himself for the ends of the State, without question, hesitation, or regret, feeling that this function is not to reason why but merely to do and die. And he will be incapable of thinking of anything better than the established order which has made and moulded him. Evidently it will take many generations and the severest and most unrelenting discipline to evolve him; but when he is evolved, he will be in many respects a very formidable beast!

But he will be lacking in intelligence, and this deficiency may prove his undoing, if he has to contend against a different type of man. Intelligence is essentially adaptability, the capacity to vary response and to modify habitual action under novel conditions and thereby to improve adjustment. Of such intelligence the ant-man will become as incapable as the ant, for, like the ant's, his intelligence will have become a matter of habit and instinct. For dealing with novelties he will not be equipped, and so his unintelligence will make him unprogressive; yet the need for progress may be forced upon him. If new conditions arise, if new adjustments are required, his instinctive intelligence will be too stereotyped to make them. He will go under, therefore, if he has to compete with plastic and more flexible types of intelligence.

This is a prediction which may safely be based on the history of the social insects. They, too, are essentially unprogressive. They have existed, apparently for eons, in their present state. They had discovered the value of social combination ages before the ancestors of man did and had elaborated highly complex and ingenious forms of social life. They, too, have domesticated animals and plants; and in the complete subjugation of the individual and the frictionless working of their institutions their social order appears to be greatly superior to ours. They have also devised more perfect methods of birth-control and of regulating population than any we have reached.

But they have never advanced towards a domination of the earth. For they doomed themselves to stagnation by sterilizing the individual and arresting the natural selection of superior types. The worker-ant (and -bee and -termite) has been unsexed in order that nothing may detract from devotion to the common weal, and leaves no descendants to learn by her experience; while the males and functional females have been reduced to mere instruments of propagation.

An essentially similar policy is bound to be pursued in human communisms, if they survive. The taming of the individual and the extirpation of his individualism will demand the reduction of the human worker to the level of the insect worker. The process will presumably be painful, long, and difficult; but it has already begun. The Bolsheviks began it by exterminating or expelling their *intelligentsia*. They are now continuing it by periodically decimating their technicians for the crimes of sabotage and counter-revolutionary activities. They seem to think that men will work best with the sword of Damocles hanging over them. They are also sending to Siberia and similar resorts (where, if they survive, they may grow into a nucleus for a successful revolt against the whole system) as *kulaks* all the more intelligent and energetic of their peasants. But even the somewhat crudely selective method of shooting the "planners" when their plans break

down does not seem very likely to conduce to better planning, if there is any truth in the assumption that the best reputed planners had been selected to do the planning! And by constant selection of the submissive and elimination of the recalcitrant, what are they likely to achieve but a progressive lowering of the level of the collective intelligence? In short, the Ant-men seem to have a poor prospect of surviving in a world which harbours also other sorts of men.

Will the world ever harbour more efficient sorts of men—more efficient, that is, than our present men are, or than Communists can ever hope to be? There is at least a chance of this. For what may be termed a Superman is scientifically conceivable and can be brought into existence by sustained and intelligent efforts, hardly more difficult than those needed to produce the Ant-man. Already one of the new dictatorships, the German, has declared in favor of eugenics, alike in its negative or sanitary form, which aims at purifying the stock, and in its positive and more ambitious form, which aims at creating a real aristocracy and a better type of man. No doubt many centuries may elapse between this declaration and the realization of its programme; but it is nonetheless significant that the ideal of eugenics should now have been officially adopted and proclaimed in a great modern State. If, moreover, as we may hope, the methods adopted are intelligent and adequate and really able to purify and invigourate the human stocks subjected to them and actually to raise the level of human intelligence, the example of Germany must prove infectious and will be imitated everywhere. Thus the human race may be enabled to resume the progressive evolution which has been so deplorably arrested by the unforeseen mischiefs of a biologically dysgenic civilization. Civilization hitherto has been dysgenic in its effects, because it has so softened the conditions of life that weaklings in depressed social strata have been able to survive and to propagate abundantly, while in the upper strata there have been such temptations, so much fighting, so much prudence, that their numbers have always dwindled. A truly and inherently progressive civilization, on the other hand, would be so ordered as to recruit itself from its best stocks and to eliminate, slowly but surely, its defective material. By so doing it will progressively ameliorate social conditions by in creasing the efficiency and capacity of the individual citizens.

It is plain, however, that any programme of eugenics, or what the Germans call "race-hygiene," manifestly looks ahead to a distant future and demands faith, determination, and perseverance. It is no programme for the immediate future and holds out no hope of instant commercial returns. Hence, at first, stern discipline will be needed to enforce it and to steer the ship of State straight for so distant a goal. Probably eugenics will have to be elevated into a sort of biological religion and equipped with appropriate

ritual and myths. But this should not prove more difficult than was the creation of the early astronomical religions, with their assiduous worship of the heavenly bodies. as a means of determining the length of the year. Nor would there be anything in the eugenical programme and the social discipline it entailed to debase the Super-man and to lower his intelligence to that of the Ant-man. For he would always be encouraged to develop his faculties and to excel. Hitlerism is already committed to the policy of developing leadership, a quality which the democracies are more and more failing to produce; and it would surely be the height of folly to breed leaders only to dispose of them after the fashion of the Purge. Society would not attempt, therefore, as in the communist State, to abolish competition, to extinguish initiative, and to make all equal by levelling down and eradicating individuality. It would realize that by such attempts it was hamstringing progress and that in individual variation alone could be found the stimulus and source of salutary innovation. Instead of suppressing individuality, therefore, it would be content to socialize it by education.

Hence it is possible that a Fascist dictatorship, even though it might not initially appear to be any more favourable to human freedom and development than a dictatorship for the alleged benefit of the Proletariat, would develop very differently. Originally both are essentially socialistic: they agree in demanding the subjection of the individual to social purposes. But after that their paths may diverge. Communism sets out from a postulate of human equality and proceeds to grind down individuals to the uniform degradation of the Ant-man. But Fascism, unhampered by any such dogma, can afford to develop all suitable individuals and to utilize all talents in building up its social synthesis. If it desires to progress, it can adopt the eugenical programme of human development and aim at the ideal, not of an Ant-man, but of a Super-man. It will then have to utilize the progressive possibilities latent in human individuality and to cherish the individuals from whom it will derive the impetus to progress. Moreover, as it will not be able to determine altogether a priori what will turn out to be the value of various variations in behaviour and endowment, it will have to adopt an open-minded experimental attitude and to practise a good deal of toleration. And on this scientific basis there may once again grow up a considerable degree of Liberalism and a certain amount of rational discussion. This new Liberalism will differ from the moribund Liberalism of to-day in being based, not on abstract dogmas about the equality and rationality of men, but on science and experience. We may hope, also, that the grievous collapse of nineteenth-century Liberalism will serve it as a salutary warning to be ever on its guard against the danger of atavistic relapses into brutality and savagery.

But these solicitudes concern the future. For the moment our most

urgent task and immediate endeavour must be to extricate ourselves from our present mess and the imminent danger of a rapid reversion into barbarism. If we can prevent our feelings from sacrificing our civilization to our nationalism, and our dictatorships from growing into tyrannies, we may find leisure to give some careful thought to the momentous choice between the alternative social developments now confronting us. Shall we aim at the Ant-man or at the Super-man? If we do not choose speedily and rightly, the avenging Furies of our past misdeeds may turn us back again into the beasts we were.

NOTE

1. In the *Origin of Man* (Cambridge University Press, 1925), chs. v and vi.

Part Five

TRUTH

INTRODUCTION TO PART FIVE

Hugh McDonald

Schiller thought that the issues and problems surrounding truth were unique to humans, and confined to humans (*Studies in Humanism* 5, included in this volume), a perspective that fit in well with his overall humanism. Like Dewey and the other pragmatists, he believed that truth was not just sitting waiting to be discovered, but requires an active search.[1] Since truth must be tested to be validated, truth depends upon consequences. In this view he was closer to James than Peirce.

Schiller played an important role in defending the new pragmatic theory of truth from its early critics, both idealist and realist. He devoted considerable efforts and a number of essays to refining his views on truth, which he considered a major problem for pragmatism. Schiller had a complex and nuanced view of truth, which he called a "central" concept in epistemology. Firstly, truth is connected with logic, science and above all practice. Secondly, as in James's theory, there is the notion of consequences. Thirdly, there is a psychological connection. Fourth, Schiller argued that truth is a value, and this was both his contribution to and expansion of the pragmatic theory. Indeed, he defined pragmatism as, among other things, "the doctrine that truths are logical values. . . ."[2] Fifth, truth requires some meeting of minds as a social product. Finally, truth is historical and changes through the ages.

In one sense truth as a value is evident from logic, where the "truth value" is used in truth tables and the like. Truth-value attaches to correct judgments and propositions. Logic, then, already contains the notion of truth as a value. But a further element is that truth is a standard that we aim for in our research, investigations and experiments. We do not know the truth in advance, but must search for it. The search is formalized as an activity aiming at an end, a consequence. Thus truth is tied to consequences. This model holds for practical investigations as well, of how to accomplish some goal. Since we may not actually hit the truth, truth is a standard, an ideal value that we aim at as a consequence. In some cases we achieve the ideal and meet the standard. In other cases, we fail. Truth then is a standard that is regulative over experience.

Truth must be useful and relevant. "if . . . your practical experience suggests to you that a certain conception would be useful, if it were true, you would reasonably give it a trial to see whether it is not 'true.' . . ."[3] Schiller was criticized for tying truth to usefulness, but he denied that this view implied its reverse, that the useful is always true. What is useful is important for practice. Since truth is a valued consequence of practice, Schiller has provided support for the pragmatic theory. However, he has added his own particular twist to the theory with the connection to value. Humans pursue truth as a valued result, whether in the lab or in practical life. He also discussed the "biological value" of truth, that is, its survival value. Since truth is a value, harmonizing it with other values is at least thinkable as an ultimate ideal. However, Schiller also notes that criteria of relevance will keep extraneous notions like virtue out of the sciences.

Since Schiller has argued for the useful character of truth, its instrumental value as it were, he can claim that "truth is a form of value, and for his reason related to and largely interchangeable with, our other modes of valuation."[4] Truth is the value that is assigned to logically valid judgments, a distinct kind of good. "In the end we recognize that *Truth, too, is Value*, and decline to predicate the 'truth' of any 'fact' which seems discordant with our system. Indeed it is by such a reference to logical values that we discriminate among the 'facts' which claim reality and grant or refuse their application." ("The Place of Pessimism in Philosophy," this volume, p. 157).

In his idea of truth as a form of value, Schiller can explain why relevance is an important part of scientific discovery. Or its usefulness, i.e. its value, may lie within the science as shedding light upon it.[5] He also believed that it was more in accord with scientific procedure. Truth claims must be tested for validation.

One of the more controversial claims made by Schiller is that truth must provide "emotional satisfaction," as well as logical validity. This is the element of truth that logicians are most inclined to resist, since they want

to separate the "pure" truth from any emotional attachments. But Schiller insists that a proposition must be "felt" true. Logic cannot produce pure thought without other psychological motives, including "desire, feeling, interest, attention and will" (*Riddles of the Sphinx*, pp. 53 ff.). The articulation of truth involves complex psychological processes and Schiller denies that this process is irrelevant to the process. But more, the consequences should on some level be emotionally satisfying. However, what has been overlooked by critics is that he also recognizes that such feelings are not sufficient to make judgments of truth. The psychological connection is the recognition of the human origin of truth and the complex motives and goals of humans in separating truths. Truths must be achieved by a process of investigation beginning from such origins

The limits upon subjective satisfaction are that there must be a meeting of minds. Like the other pragmatists, Schiller recognized the social aspect of truth, that is, the role of what Peirce called community. Agreement of competent observers is required for assent to truth. Thus he rejects the notion that subjective claims to truth, what he calls "truth claims," are objectively valid. The latter requires investigation and consensus; validity, as with James, is tested by consequences in the course of inquiry. Since investigation is active and experimental, Schiller argues that truth is made, as the product of such scientific work in the process of inquiry is the validation of truth.[6]

Since truth is the consequence of the process of discovery, it also has a historical element: it develops historically. In this view, Schiller seems to confuse knowledge, which is fallible, with truth. What was considered true in the past may be false upon further investigation. But does not mean that truth as a standard changes, or that truths can be false. Our knowledge may be false although we think it is true. But truth cannot be false. Schiller would respond that our criteria of truth must also grow historically with its instances.

Truth is systematic for philosophy, that is, interconnected with other parts as a harmonic whole. Schiller's notion extends value to the definition of truth. Schiller's concept of truth as a logical value is consistent with his philosophy as systematically based on the good and compares in this respect to Aristotle's notion of the truth of being and of Descartes' of truth as a character of ideas. The notion of "truth," which Schiller analyses in terms of logical truth, is based on the good as much as the metaphysical notion of the real.

Schiller is opposed to the idea of any "pure" or ideal truths that occupy a privileged or value-free sphere, as his constant polemics against Absolute Idealism attest. Logic, metaphysics and epistemology are all given a foundation of values. Schiller rejects the coherence, correspondence and several

other theories on both their internal inadequacies as theories of truth,[7] and also on grounds of value.[8]

Truth, like knowledge is a valued end or consequence of the pursuit of truths. This is not to say that truth is always concerned with value questions and never questions of, for example, nature. Instead, human goods and ends are the framework upon which truths are sought, discovered, and put to use. In sum, Schiller wanted to "humanize" truth.

Notes

1. "The Humanist Theory of Truth," this volume, p. 520.
2. "The Definition of Pragmatism and Humanism," this volume, p. 49.
3. "' Useless' Knowledge," *Humanism*, p. 36.
4. "Truth," this volume, p. 474.
5. Ibid.
6. "The Making of Truth," this volume, p. 504.
7. *Logic for Use*, chap. 7.
8. "Truth," this volume, p. 474.

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AXIOMS AS POSTULATES

I

§1. The first survey of his subject ought to be sufficient to appall the intending writer on almost any philosophic topic. The extent, variety, and persistence of the divergences of opinion which he finds are such that he needs to be possessed of unusual faith and courage not to despair of convincing even an unprejudiced reader—and in philosophy where shall he be found?—that his undertaking holds out any prospect of scientific advance. For it needs no little philosophic insight to perceive that these divergences, instead of discrediting Philosophy, are really a subtle tribute to its dignity. They testify that in our final attitude towards life our *whole personality* must be concerned, and tend to form the decisive factor in the adoption of a metaphysic. As soon as a metaphysic attempts to be more than 'a critical study of First Prejudices', and essays to be constructive, it will always come upon a region where different men argue differently, and yet with equal cogency, from (apparently) the same premises. The most reasonable explanation of this phenomenon is to admit that as the men

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Personal Idealism, ed. Henry Sturt (London and New York: Macmillan, 1902), pp. 47–133.

are different, and differ in their experience, neither the data which have to be valued, nor the standards by which they are valued, can really be the same. Indeed, the whole history of philosophy shows that the fit of a man's philosophy is (and ought to be) as individual as the fit of his clothes, and forms a crushing commentary on the intolerant craving for uniformity which ineffectually attempts to anticipate the slow achievement of a real harmony by the initial fallacies and brusque assumptions of a 'cheap and easy' monism. It behoves the true philosopher, therefore, to be tolerant, and to recognize that so long as men *are* different, their metaphysics *must be* different, and that even so, nay for this very reason, any philosophy is better than none at all.

But though the ultimate differences of philosophic opinion are probably too deeply rooted in human idiosyncrasy to be eradicated by any force of argument, it is none the less conducive to the progress of every philosophic discussion that some common ground of (at least apparent and preliminary) agreement should be found on which the rival views may test their strength. This is accordingly what I have tried to do, though it was not without difficulty that I seemed to discover two fundamental points of initial agreement which would, I think, be admitted by nearly all who have any understanding of the terms employed in philosophic discussion. The first of these is that the whole world in which we live is experience and built up out of nothing else than experience. The second is that experience, nevertheless, does not, alone and by itself, constitute reality, but, to construct a world, needs certain assumptions, connecting principles, or fundamental truths, in order that it may organise its crude material and transmute itself into palatable, manageable, and liveable forms.

Acceptance of these two propositions does not perhaps carry us far, and I have no desire to exaggerate its controversial value. For, as soon as we attempt to go a step farther and ask what, more precisely, is this experience, out of which, and for the sake of which, it is agreed that all things are constructed, we speedily realise that we have, here also, stumbled unwittingly into a very quagmire of metaphysical perplexities. It is indeed a convenient fashion in high philosophic quarters to treat the harmless truism with the enunciation of which I have ventured to start, as the final term in a protracted course of dialectical philosophy, and to put forward Experience (written of course with very large capitals) as the ultimate explanation of all things. My excuse for not treating my readers (if any) to a similar performance must be that I have neither the heart nor the head for feats of this kind, and that they can always fall back upon the consoling dictum that experience is Experience (with the addition 'of the Absolute' thrown in, if they are very inquisitive), when they have found that my explorations in a very different direction lead to nothing interesting or valuable.

§2. I shall accordingly proceed to divide my question into two. If all the world be experience and what is needed to understand that experience, (1) *whose* experience is it? and (2) *of what* is it experience? To both questions again some will be satisfied to reply—'of the Absolute, of course'. If that really contents them, and is all they wish to know, they had better read no further. For my part, I hold that this answer, even if it were true and intelligible, is of no scientific or practical value whatsoever, and hence cannot be of any philosophic value either, except to votaries of philosophies which have no scientific or practical value.

To the first question, therefore, I shall make bold to answer, '*our* experience', or, if that imply too much agreement among philosophers, and I may not take a common world for granted, more precisely, '*my* experience'.

Here again I must be prepared to be assailed by a furious band of objectors intent on asking me—"Who are you? How dare you take yourself for granted? Have you not heard how the self is a complex psychological product, which may be derived and analysed away in a dozen different ways? And do you actually propose to build your philosophy upon so discredited a foundation?"

To all this the simplicity of my humble reply may, I fear, be thought to savour of impertinence. I shall merely say "Abate your wrath, good sirs, I beseech you. I am right well aware of what you urge. Only I have observed also a few facts which in your scientific zeal you have been pleased to overlook. In the first place I notice that these analyses of the self you allude to are various, and that so the self may find safety in the very multitude of its tormentors. I observe, secondly, that the analysis is in every case effected by a self. And it always gives me a turn when the conclusion of an argument subverts its own premise. Next I note that these analyses being the products of self, must, if that self is (like my own) rational, serve some purpose. But unless that purpose is the highest of all (which in your case I see no reason to suppose), the validity of the whole procedure will be relative, and its value methodological. It may be excellent, therefore, for your purposes and quite unsuitable for mine. And, lastly, I observe that an analysis does not fall from heaven ready made; it is the product of a purposive activity, and however appalling it may sound, it remains *brutum fulmen* until such time as somebody *chooses* to adopt it. It is from this act of choice, then, that its real efficacy springs, and if I *choose* to analyse differently or not at all, if I find it convenient to operate with the *whole* organism as the standard unit in my explications, what right have Scribes and Pharisees to complain? For in either case the choice must be justified by its consequences, by the experience of its working, and I am not aware that anything valuable or workable has resulted from the psychological analyses in question. I am therefore sanguine that the assumption of my own existence, which I provi-

sionally make, may very possibly turn out better and be less futile than any of the denials of the self which it may seem convenient to maintain for certain restricted and technical purposes of psychologies which neglect their proper problem in their anxiety to be ranked among the 'natural sciences'.

"As for the other, personal, question—'Who am I?'—*that* we shall see. I say *we* pointedly, because, to be quite frank, I too am still learning what I am, by experience. For unfortunately I was as little endowed with any a priori knowledge of myself as of anything else. Hence I can only say, provisionally, that I am *at least* what I am, and what I am capable of becoming. For I have a notion that my career is not yet over. In saying this I do not, of course, lay claim to anything unknowable; I only mean that I am not anything completely known, either to myself or any one else, until I cease to have *new* experience. And if you are content to share these humble attributes and to be selves in this sense, you are very welcome!"

§3. I come next to the second question—*what* is it I experience? The answer must be very similar. My knowledge of the object of experience—we may call it 'the world' for short—is still imperfect and still growing. And so though I may provisionally describe it by all the ordinary phrases as 'external', and material, and spatial, and temporal, I do not attach much value to them, and cannot honestly say that I know what it ultimately is. For I do not know what it will ultimately turn into. Not of course that I despair on that account of ultimately answering this question also to everybody's satisfaction (and especially to my own!). Only the world of knowledge always seems to be painted on an uncompleted background of the unknown, and fresh knowledge is always coming in which modifies the total impression. This knowledge is largely (or perhaps wholly) the result of guesses which I cannot help making, like my fathers before me, for practical reasons. As for the character and the details of these guesses, are they not written in the histories of human sciences and religion?

§4. In reflecting on these histories, however, I observe several things which seem to have no slight bearing on the question of the nature of the world and our knowledge.

(1) The world, as it now appears, was not a ready-made datum; it is the fruit of a long evolution, of a strenuous struggle. If we have learnt enough philosophy to see that we must not only ask the ontological question, *What is it?* but also the profounder epistemological question to which it leads, *How do we know what it is?* we shall realise that it is a *construction* which has been gradually achieved, and that all the toll thereof dwarfs into insignificance the proverbial labour *Romanam condere gentem.* As a rule we do not notice this, partly because we are taught to neglect the history of ideas for the sake of burdening our memory with the history of events (which very likely did not happen in the manner alleged), partly

because the sciences have a habit of evading the verbal confession of the changes which the growth of knowledge has wrought in their conceptions. Thus the physicist continues to use the term 'matter', although it has come to mean for him something very different from the simple experiences of hardness and resistance from which its development began, and although he more and more clearly sees both that he does not know what 'matter' ultimately is, and that for the purposes of his science he does not need to know, so long as the term stands for something the behaviour of which he can calculate.

§5. (2) I observe that since we do not know what the world is, we have to find out. This we do *by trying*. Not having a ready-made world presented to us the knowledge of which we can suck in with a passive receptivity (or rather, *appearing to have* such a world to some extent only in consequence of the previous efforts of our forerunners), we have to make experiments in order to construct out of the materials we start with a harmonious cosmos which will satisfy all our desires (that for knowledge included). For this purpose we make use of every means that seems promising: we try it and *we try it on*. For we cannot afford to remain unresistingly passive, to be impressed, like the *tabula rasa*[1] in the traditional fiction, by an independent 'external world' which stamps itself upon us. If we did that, we should be stamped out. But experience is always more than this: it is either experiment or *reaction*, reaction upon stimulation, which latter we ascribe to the 'external world'. But reaction is still a kind of action, and its character still depends in part on the reacting agent. Nor have we any independent knowledge of the 'external world'; it is merely the systematic way in which we construct the source of the stimulation on which we feel ourselves to be reacting. Hence even our most passive receptivity of sensations can, and should, be construed as the effortless fruition of what was once acquired by strenuous effort, rather than as the primal type to which all experience should be reduced. In it we are living on our capital (inherited or acquired), not helping to carve out ('create') the cosmos,[2] but enjoying the fruits of our labours (or of those of others!). Which is pleasant, but not interesting. What is interesting is the course of the active experimenting which results in the arts, the sciences, and the habits on which our social organisation rests.

I proceed accordingly to consider the mass of experiments which collectively make up the world-process and by their issue determine the subsequent course of affairs. At the outset there seems to be nothing determined, certain, or fixed about it. We may indeed shrink from the assertion of an absolute indeterminism, but it is certain that we cannot say what made or determined the character of the first reaction, and that the first establishment of a habit of reaction is a matter of immense difficulty. And

to a less extent this indeterminateness persists as the structure of the cosmos grows. The world is always ambiguous, always impels us at certain points to say, 'it may be', 'either . . . or', etc.[3] Nor were it well that it should grow rigid, unless we were assured that it would set in forms we could not wish to change. As it is, we have no absolute nor initial rigidity. All determinations are acquired, all are ratified, by their working; nothing can be said to be absolutely exempt from modification and amendment by experience of its working.

The intellectual cosmos also neither has nor needs fixed foundations whose fixity is an illusion. Like the physical universe it is sustained by the correspondence and interplay of its parts; or, if we prefer it, floats freely in a sea of the unknown, which now and again buffets it with its waves, but across which the sciences have established well-travelled routes of intellectual intercourse.

The cosmos grows, as we have said, by experiment. Such experiment may have been random at first (as for methodological purposes we shall be prone to assume); at all events it was vague, and its prescience of its issue was probably obscure. In any case its direction is ultimately determined not so much by its initial gropings as by the needs of life and the desires which correspond to those needs. Thus the logical structures of our mental organisation are the product of psychological functions.[4]

It must next be admitted that when it is said that the world is constructed by experiment, the conception of experiment is taken very widely and in a way that extends far beyond the conscious experiment of the scientist who is fully aware of what he does and what he wants, and precisely controls all the conditions. Of the 'experimenting' which builds up the cosmos the scientific experiment is only an extreme case which even now is comparatively rarely realised. Most of the experimenting that goes on is blind or very dimly prescient, semiconscious or quite unconscious. To what extent there is consciousness of the experimenting depends of course on the mental development of the beings engaged in it; for while in the lowest it is infinitesimal, the more intelligent they become the more capable they are of taking the experimenting in their own hands.

But from the experimenting itself there is no escape; it goes on, and if we refuse to experiment, we *are experimented with.* Nay, in this sense we are all nature's experiments, attempts to build up a world of beings that can maintain themselves permanently and harmoniously. We are asked as it were, "Can you do this?" and if we cannot or will not, and "do not answer," we are eliminated. The elimination which is involved in this experimenting habit of nature's has in modern times been widely recognised, under the name of Natural Selection; its essence is that a large number of individuals and varieties should be produced *on trial* (as 'accidental variations' or *θεία*

μοίρα), and that upon those that stood their trials best should devolve the duty of carrying on the world. The conception of Natural Selection was suggested by human selection; its procedure by trying is so far analogous to that of our own intelligence, and it is denied to be that of an intelligence only because of a misunderstanding of the methodological character of the postulate of indefinite variation.[5] We may therefore plausibly contend that if a superhuman intelligence is active in the forming of the cosmos, its methods and its nature are the same as ours; it also proceeds by experiment, and adapts means to ends, and learns from experience.

We see then that there are two excellent reasons for conceiving the notion of experiment so broadly. In the first place it becomes possible thereby to comprehend under one head the infinite complications and gradations which are possible in the consciousness of the experimenter, from the most random restlessness and the most blindly instinctive adaptations, to the most clearly conscious testing of an elaborate theory; in the second, it serves to bring out the radically tentative tendency which runs through the whole cosmos. And if the propriety of a phrase may be held to atone for the impropriety of a pun, we may sum up our result by saying that the clue to experience must be found not in words but in deeds, and that the method of nature and the true method of philosophy is not a *Dialectic* but a *Trialectic*.

§6. (3) In describing our activity in constructing the world by experimenting or making trial, I may seem to have ignored the subject-matter of the experiment, *that in which* and the conditions *under which* we experiment. But of course I have no intention of denying the existence of this factor in our experience and, consequently, in our world. We never experiment *in vacuo*; we always start from, and are limited by, conditions of some sort. Just as our experiment must have some psychological motive to prompt it and to propel us, so it must be conditioned by a resisting something, in overcoming which, by skilfully adapting the means at our disposal, intelligence displays itself. Let it be observed, therefore, that our activity always meets with resistance, and that in consequence we often fail in our experiments.

But while there can be no dispute as to the fact of this resistance, there may be not a little as to its nature, and no slight difficulty about defining it with precision. It would be pushing Idealism to an unprofitable extreme to revert at this point to the ancient phrases about the Self positing its Other and so forth. But the opposite and more usual device of dubbing it an objective or material world which exercises compulsion upon us, is also not free from objection.

For what is so misleading about this traditional manner of talking is that it implies just what we have seen to be untrue, viz. that there is an

objective world given independently of us and constraining us to recognise it. Whereas really it is never an independent fact, but ever an aspect in our experience, or better still, a persisting factor in it, which we can neither isolate nor get rid of. Hence, however far back we essay to trace it, we can never say either what it is really and in itself, or that it has disappeared. If we take it as it appears in our experience as now organised, we are, similarly, met with the difficulty that what it now is is nothing definitive, but merely a term in a long development the end of which is not yet in sight. And if, led by such considerations, we look forward and declare that the objective world most truly is whatever it develops into, who will take it upon himself to prophesy concerning its future developments, and guarantee that it will always remain objective in the way it is at present, that it will continue to resist and constrain? For already it is only partially true that it constrains us; it is becoming increasingly true that we constrain it, and succeed in moulding it into acceptable shapes. In what sense, therefore, should we continue to call 'objective' a world which had ceased to be objectionable and had become completely conformable and immediately responsive to our every desire?

The truest account, then, it would seem possible to give of this resisting factor in our experience is to revive, for the purpose of its description, the old Aristotelian conception of 'Matter' as *ὕλη δεκτικὴ τοῦ εἴδους*, as potentiality of whatever form we succeed in imposing on it. It may be regarded as the raw material of the cosmos (never indeed wholly raw and unworked upon), out of which have to be hewn the forms of life in which our spirit can take satisfaction. To have lost this sense of 'matter', in the effort to render its notion more precise and useful for the purposes of the natural sciences, is a real loss to philosophy. And yet the notion of matter as an indeterminate potentiality which, under the proper manipulations, can assume the forms we will, reasserts itself *de facto* whenever the great physicists set themselves to speculate respecting the 'ultimate constitution of Matter'. For provided only that their results enable them to calculate, more or less, the behaviour of sensible matter, they never hesitate to calculate into existence new 'ethers' and modes of matter and to endow them with whatever qualities their purpose demands and their imagination suggests.

§7. (4) The world, then is essentially *ὕλη*, it is what we make of it. It is fruitless to define it by what it originally was or by what it is apart from us (*ἡ ὕλη ἄγνωστος καθ᾽ αὑτὴν*); it *is* what is made of it. Hence my fourth and most important point is that the world is *plastic*, and may be moulded by our wishes, if only we are determined to give effect to them, and not too conceited to learn from experience, i.e. by trying, *by what means* we may do so.

That this plasticity exists will hardly be denied, but doubts may be

raised as to how far it extends. Surely, it may be objected, it is mere sarcasm to talk of the plasticity of the world; in point of fact we can never go far in any direction without coming upon rigid limits and insuperable obstacles. The answer surely is that the extent of the world's plasticity is not known a priori, but must be found out by trying. Now in trying we can never start with a recognition of rigid limits and insuperable obstacles. For if we believed them such, it would be *no use* trying. Hence we must assume that we can obtain what we want, if only we try skillfully and perseveringly enough. A failure only proves that the obstacles would not yield to the method employed: it cannot extinguish the hope that by *trying again* by other methods they could finally be overcome.

Thus it is a *methodological necessity* to assume that the world is *wholly plastic*, i.e. to *act as though* we believed this, and will yield us what we want, if we persevere in wanting it.

To what extent our assumption is true in the fullest sense, i.e. to what extent it will work in practice, time and trial will show. But our faith is confirmed whenever, by acting on it, we obtain anything we want; it is checked, but not uprooted, whenever an experiment fails.

As a first attempt to explain how our struggle to mould our experience into conformity with our desires is compatible with the 'objectivity' of that experience, the above may perhaps suffice, though I do not flatter myself that it will at once implant conviction. Indeed I expect rather to be asked indignantly—'Is there not an objective nature which our experiments do not make, but only discover? Is it not absurd to talk as if our attempts could alter the facts? And is not reverent submission to this pre-existing order the proper attitude of the searcher after truth?'

The objection is so obvious that the folly of ignoring it could only be exceeded by that of exaggerating its importance. It is because of the gross way in which this is commonly done that I have thought it salutary to emphasis the opposite aspect of the truth. We have heard enough, and more than enough, about the duty of humility and submission; it is time that we were told that energy and enterprise also are indispensable, and that as soon as the submission advocated is taken to mean more than rational methods of investigation, it becomes a hindrance to the growth of knowledge. Hence it is no longer important to rehearse the old platitudes about sitting at the feet of nature and servilely accepting the kicks she finds it so much cheaper to bestow than half-pence. It is far more important to emphasise the other side of the matter, viz. that unless we ask, we get nothing. We must ask often and importunately, and be slow to take a refusal. It is only by asking that we discover whether or not an answer is attainable, and if they cannot alter the 'facts', our demands can at least make them appear in so different a light, that they are no longer *practically* the same.

For in truth these independent 'facts', which we have merely to acknowledge, are a mere figure of speech. The growth of experience is continually transfiguring our 'facts' for us, and it is only by an *ex post facto* fiction that we declare them to have been 'all along' what they have *come to mean for us*. To the vision of the rudimentary eye the world is *not* coloured; it becomes so only to the eye which has developed colour 'sensitiveness': just so the 'fact' of each phase of experience is relative to our knowledge, and that knowledge depends on our efforts and desires to know. Or, if we cling to the notion of an absolutely objective fact of which the imperfect stages of knowledge only catch distorted glimpses, we must at least admit that only a final and perfect rounding-off of knowledge would be adequate to the cognition of such fact. The facts therefore which *we* as yet encounter are not of this character: it may turn out that they are not what they seem and can be transfigured if we try. Hence the antithesis of subjective and objective is a false one: in the process of experience 'subject' and 'object' are only the poles, and the 'subject' is the 'positive' pole from which proceeds the impetus to the growth of knowledge. For the modifications in the world, which we desire, can only be brought about by our assuming them to be possible, and *therefore* trying to effect them. There is no revelation either of nature or of God, except to those who have opened their eyes; and we at best are still self-blinded puppies.

Even the notion that the appearances which reality assumes to our eyes may depend on the volitional attitude which we maintain towards them is a truism rather than an absurdity,[6] and nothing is more reasonable than to suppose that if there be anything *personal* at the bottom of things, the way we behave to it *must* affect the way it behaves to us. The true absurdity, therefore, lies in our ignoring the most patent facts of experience in order to set up the Moloch of a rigid, immutable and inexorable Order of Nature, to which we must ruthlessly immolate all our desires, all our impulses, all our aspirations, and all our ingenuity, including that which has devised the very idol to which it is sacrificed!

§8. The above sketch of the nature and manner of the process which has moulded us and the world of our experience may have seemed to bear but remotely on the relations of Axioms to Postulates. In reality, however, it will be found that the whole subsequent argument has already had its main lines mapped out by our introductory discussion of the *Weltanschauung* which Prof. James has called *pragmatism* and *radical empiricism*.[7] For when, as we must do, we apply it to the theory of our cognitive faculties and the first principles whereby in knowledge we elaborate our experience (§1), it leads to very distinctive treatment of epistemological problems, differing widely from those traditionally in vogue. It follows that the general structure of the mind and the fundamental principles that support

it also must be conceived as growing up, like the rest of our powers and activities, that is, by a process of experimenting, designed to render the world comfortable to our wishes. They will begin their career, that is, as *demands* we make upon our experience or in other words as *postulates*, and their subsequent sifting, which promotes some to be axioms and leads to the abandonment of others, which it turns out to be too expensive or painful to maintain, will depend on the experience of their working.

The contrast with both of the traditional accounts of the matter, both that of the old empiricism and of epistemological apriorism is well marked, and I hope to show that its superiority is no less palpable.

The truth is that both the traditional accounts of the nature of Axioms are demonstrably wrong, and though to give such a demonstration may appear a digression, it will ultimately facilitate our progress. I shall accordingly indulge in a criticism, which will show that the axiomatic first principles, whereby we organise and hold together our knowledge, are neither the products of a passive experiencing, nor yet ultimate and inexplicable laws or facts of our mental structure, which require from us no effort to attain comprehension but only recognition and reverence as 'a priori necessary truths'. In the case of empiricism the criticism will be comparatively brief and easy, because its inadequacy is pretty generally conceded; apriorism will demand a lengthier and more difficult discussion, because it has attempted to conceal its inadequacy behind so many technicalities of language, so many obscurities of argumentation and a fundamental duplicity in its standpoint.

II

§9. Taking then the old empiricism first, we observe that there seems to be little doubt about its standpoint. Its derivation of the axioms is frankly psychological, and describes how the mind may be conceived actually to come by them. Its psychology is doubtless mistaken, and its recourse to psychology to settle the problem of knowledge may often be crudely worded, but it propounds a definite method of answering a real question. And we are at least free from the perplexities which arise in apriorism when an argument is conducted on two planes at once, the psychological and the epistemological (logical), and the relations of the two are left carefully undefined.

Secondly, it should be noted that empiricist psychology is at bottom quite as much infected with intellectualism as that of the apriorists. It conceives, that is, the experience which yields the elements of our mental structure as cognitive ('impressions', 'ideas', etc.); it does not place the central

function of mental life in volitional striving and selective attention. Now intellectualism, though it may lend itself to many descriptive purposes in psychology and hence will probably never wholly disappear, is ultimately a misdescription of mental life even as psychology, while it is essentially incapable of connecting itself with the wider biological context, in which the organism is conceived as reacting on its environment, or with the higher ethical plane, on which it is conceived as a responsible *person*.

I pass to the graver counts of the indictment. Empiricism conceived a purely passive mind as being moulded by an already made external world into correspondence with itself in the course of a process of experience which overcame whatever native refractoriness the mind possessed.[8] Hence we come by our belief that every event has a cause in consequence of the *fact* that there are causes in nature, and that this eventually impresses itself upon us; two and two make four, because there are units which behave so, and we must count them thus and not otherwise, though in another world, as Mill consistently observed, they might insist on making five, and force upon us a new arithmetic. So also it is because nature *is* uniform that an unbroken series of inductions *per enumerationem simplicem* hammers into us the principle of the 'uniformity of nature'.

To all this the fatal objection holds that these principles cannot be extracted from experience because they must already be possessed before experience can confirm them. Hume's simple discovery, that the connection of events which all assume is never a fact of observation, is as awkward for empiricism as for apriorism. Unless, therefore, we look upon the succession of events as possibly regular, it can yield no evidence of a principle of regularity; until we count them, things are not numbered, until we look for order, order does not appear. In the case of the uniformity of nature Mill indeed practically concedes this; he admits (*Logic*, bk. iii. ch. iii. §2, and ch. vii. §1) that "nature not only is uniform, but is also infinitely various," that some phenomena "seem altogether capricious," and that "the order of nature as perceived at a first glance presents at every instant a chaos followed by another chaos." Now if this is still true of the impression produced on us by nature, whenever we assume the receptive attitude of a disinterested observer, how much more of a chaos must nature have appeared to the primitive intelligence which had yet to lay down the fundamental principles of cosmic order?[9]

The truth is that the whole empiricist account of the derivation of axioms is *not* psychological history experienced by the primitive mind: like so much 'inductive logic' it is at best an *ex post facto* reinterpretation (for logical purposes) of such experience by a reflecting mind which has already grasped, and long used, the principles of cosmic order. To the primitive mind such principles can at most be *suggested* by the regularity of phe-

nomena like, e.g., the alternation of day and night, or of organic habits (breathing, heartbeat, hunger, etc.) already acquired before reflection begins; but if mere experience were the source of axioms, such suggestions of regularity would necessarily have their effect effaced by the preponderantly chaotic character of the bulk of experience, and would be swept away by a cataract of 'lawless' impressions.

Again it is incumbent on us to note the difficulty of generalising the empiricist derivation of Axioms: though Empiricism is over 2000 years old, it has never been completely carried out, and few indeed would be found to envy the empiricist the task, e.g. of adequately deriving the Principle of Identity.

And lastly, it affords just ground for complaint that empiricism as it stands, does not really satisfy the desire the appeal to which constituted its chief charm. It does not really exhibit the derivation of the axioms in a process of experience. It asserts indeed that such a derivation occurred. But it assigns to it a date in a so remotely prehistoric and prelogical age that it is impossible to observe the details of the process. And in any case the process is complete. Thus, according to Mill, the romance of the axioms is past before real thinking and scientific induction begin: association has engendered them, but that does not prevent them from being final constituents of the present intellectual order; once established "in the dim red dawn of man," they are exempt from further vicissitudes, and undergo no selection or real confirmation in the development of our intelligence. Thus they lay claim to the same vicious finality as their rivals the a priori structures of the mind: neither the one nor the other leaves room for a real growth in the intrinsic powers of the mind.

III

§10. But to castigate empiricism is to flog a dead horse; to go on a expedition against apriorism is to plunge into an enchanted forest in which it is easy to miss the truth by reason of the multitude of "universal and necessary truths" which bar one's way.

At first, indeed, nothing seems easier and more obvious than the considerations upon which apriorism is based. If there are certain truths which are necessary to all knowing, which are implied in the existence of every act of knowledge, if these truths cannot be derived from experience because they are presupposed by all experience, if, as we said, we must be in possession of them before experience can confirm them, then what can we do but call them a priori and suppose that they reveal the ultimate self-evidence structure of the mind, which we must recognise, but which it would argue impiety to question and fatuity to derive?

Nevertheless I propose to show that beneath the thin crust of this self-evidence there lie concealed unsuspected depths of iniquity, that the clearness of the doctrine is superficial and gives way to deepening obscurity the farther it is explored, that in every one of the specious and familiar phrases, which apriorists are wont to fling about as the final deliverances of epistemological wisdom, there lurk indescribable monsters of ambiguity. Nay, my criticism will culminate in a demonstration that the whole conception of an independent and autonomous theory of knowledge is afflicted with an ineradicable and incurable confusion of thought, the clearing up of which demolishes the *locus standi* of the whole apriorist position.

Let us note then in the first place that as an inference from the breakdown of the old empiricism apriorism is devoid of cogency. It does not follow that because the 'necessary' truths are presupposed in all experience they are, in the technical sense, a priori. We must indeed be possessed of them to organise our experience, but we need *not* be possessed of them in the manner asserted. It suffices that we should hold them *experimentally*, as principles which we *need practically* and would like to be true, to which therefore we propose to give a trial, without our adoring them as ultimate and underivable facts of our mental structure. In other words they may be prior to experience as *postulates*.[10]

§11. Similarly the method of postulates is capable of supplying an alternative explanation of what, since Kant, have been esteemed two infallible marks of a genuine a priori truth, viz. its universality and necessity. It is not enough merely to contend that these truths cannot come from experience, because experience can only give fact and not necessity (or at least not an objective necessity), and because it can never guarantee an absolute universality which applies to the future as well as to the present and past. For a postulate possesses both these valuable characteristics by as good a right as an a priori truth, and is not afflicted with the impotence that besets a mere record of past experience.

Its universality follows from its very nature as a postulate. If we make a demand that a certain principle shall hold, we naturally extend our demand to all cases without distinction of time, past, present, and to come. The shrinking modesty which clings to the support of precedent is out of place in a postulate. A truth which we assume because we want it may as well be assumed as often as we want it and for all cases in which it may be needed. We can make it therefore as universal as we please, and usually we have no motive for not making it absolutely universal.[11] Nor is the enormity of a postulate lessened, or atoned for, by self-denying economy in the use of it. A postulate is none the less a postulate because it is a little one, and if in making it we sin, we may as well sin boldly.[12]

Similarly the 'necessity' of a postulate is simply an indication of our *need*.

We want it and so *must* have it, as a means to our ends. Thus its necessity is that of intelligent purposive volition, not of psychical (and still less of physical) mechanism.[13] The inability to think them otherwise, which is supposed to distinguish necessary truths, is at bottom a *refusal* to do so, a refusal to strip oneself of useful means of harmonising one's experience at the summons of a casual doubt. To argue, then, from the universality and necessity of our axioms to their a priori origin is a *non sequitur* which should not be allowed to pass unchallenged, even if there were no alternative theory in the field.

§12. Let us consider next the possible meanings of the phrase 'a condition of all possible experience'. When an a priori truth is so denominated, what is the precise meaning attached to 'condition'? Does it mean that without which experience cannot *be*, or cannot *be* thought, or cannot be thought *in an aesthetically pleasing or ethically satisfactory manner*? Evidently we ought to distinguish between a truth which is operative as a psychical antecedent fact *causing* the subsequent experience and a logical factor which is detected in that experience by subsequent reflection, but need not be actually present in consciousness at the time of experiencing, and so cannot be called a psychical fact. In the latter case the 'condition of the possibility of experience' is not anything actually necessary to the experience, but rather necessary to its *ex post facto* reconstruction which ministers to our desire for the logical ideal of an intelligible system of experience.

And of course the answer to the question—what are the conditions of thinking such a logical system?—will depend on the mode of logical analysis we may choose to adopt: hence the burden of proof will rest with the advocates of any particular form of apriorism that their account is the *only one* possible.

All these considerations may be urged with still greater force against versions of the a priori conditions of experience which reduce themselves to demands (it is true for the most part semi-conscious and unavowed) that the cosmos shall conform to various aesthetical and ethical ideals: such demands may be entirely legitimate in their way, and I myself would be the last to think the worse of any philosopher for showing susceptibility to ethical and aesthetical ideals, and holding that their realisation also is included in the conditions of a thoroughly rational experience. But should they not be avowed as such? and is it not entirely improper to mask them under the ambiguity of 'the conditions of experience'? There remains then only the first interpretation, which takes the 'condition' to be an actual psychical fact, and so decides in one way the very debatable question which must next engage our attention.

§13. What does a priori mean? When we speak of 'the a priori principles implied in the existence of all knowledge', do we mean implied *logically* or *psychologically*? Are they, that is, the products of a *logical analysis* or

psychical facts? Is the 'priority' asserted priority *in time* (psychical fact) or priority *in idea* (logical order)? Or, *horribile dictu*, can it be that the a priori, as it is used, is a little of both, or each in turn, and that the whole apriorist account of our axioms rests on this fundamental confusion?

Of course it would be very pleasant if we could answer this question by an appeal to authority, if we could find, for choice in Kant, or, if not, in some of his followers and interpreters, an unambiguous and authoritative settlement of this question. But unfortunately Kant's own utterances are so obscure, ambiguous, and inconsistent, and his followers are in such disagreement, that this short and easy way is barred, and that we shall have to adopt the longer, and perhaps more salutary, method of arguing out the logical possibilities of each interpretation.

§14. I shall, accordingly, begin by considering the interpretation of the a priori as a term in a logical analysis, as it seems on the whole to be that best supported and most supportable.

If we take the a priori as the outcome of a logical inquiry, as the product of a logical analysis describing how the formation of knowledge out of its constituent factors is to be conceived, if the world is to be thinkable (i.e. to satisfy our logical ideals), then the first point of which we shall require an explanation is *how we come by* these factors. In the Kantian analysis knowledge is said to arise out of the union of heterogeneous elements, Sensation and Thought, the former supplying the Matter, the latter the Form. But what authenticates Kant's fundamental antithesis of Matter and Form, Sensation and Thought, so that it should be imperative on every one to set out from it in his analysis of the nature of knowledge? Why are we not to be at liberty to conduct our analysis in whatever way and by whatever principles appear to us most suitable? Why should we be tied down to Kant's factors? Has not Mr. Shadworth Hodgson recently shown that it is possible to construct a logical analysis of knowledge as elaborate and careful as Kant's (though perhaps just as unsound ultimately) without having recourse to a use of a priori principles? Or better still, should we not do well to go back to Aristotle and find in his antithesis of mediate and immediate, discursive and intuitive, the basis of an analysis quite as legitimate in theory and far more fertile in practice? It is not in short an unavoidable methodological defect of any 'epistemological' argument that it must rest on an *arbitrary selection* of fundamental assumptions?

So far as I can see, the *exclusive* claims of the Kantian analysis could be defended only in two ways. It might be alleged that the recognition of its truth was itself an a priori necessity of thought Or it might be contended that its correctness was guaranteed by the manner of its working, by our finding that, as a matter of subsequent experience, it *did* enable us to account rationally for all the observed characteristics of our knowledge.

But would not the first defence be exposed to the rushing retort that it begged the question, and was nothing more than a circular argument which tried to make the unsupported allegation of a necessity of thought into the logical ground of that allegation?

The second defence on the other hand seems obnoxious to a double objection. In the first place has it not a pronounced empiricist trend, and is it consonant with the dignity of apriorism to introduce a sort of transcendental 'payment by results' into the estimation of theoretical philosophers? And secondly, if we answer thus, it will be necessary, but not easy, to show that *de facto* the Kantian epistemology gives a complete and satisfactory answer to the whole problem. And I hardly anticipate that the distinguished philosophers who have devoted their lives to proving the necessity of going beyond Kant to Fichte, or Hegel, or Herbart, or Schopenhauer, because of the glaring defects they have found in Kant's system, will find it to their taste so to defend the Kantian position, even though it has supplied them with the common foundation of their several systems. We must either deny, therefore, that the truth of the Kantian analysis of knowledge is vouched for by its self-evident adequacy, by the pellucid cogency of its constructions, or assert that the whole procession of philosophers that has started from Kant has gone hopelessly astray.

But after all it is not we who are concerned to find our way past the uninviting horns of this dilemma; whether the Kantian analysis of knowledge is perfect and his followers have erred in amending it, or whether it is fundamentally wrong and his followers have erred in continuing it, the point which has now aroused our curiosity is what guarantees it offers for the correctness of its presuppositions. Let us turn, therefore, to the history of philosophy and inquire whence as a matter of fact Kant derived the presuppositions of his analysis.

§15. I greatly fear the answer will be shocking. Kant's whole construction seems to be based on psychology, nay on the psychology of the period! How can this be reconciled with the assiduity with which the dominant school of Kant-Pharisees has preached that epistemology and psychology have nothing to do with each other and that the former must be kept quiet clear from contamination with the latter? After it has been so long and laboriously instilled into us that subservience to psychology is the one deadly sin which the good epistemologist must shun, that psychology is the wicked realm of Hume, Mill, and the Devil, have we not a right to be shocked when we find that Kant himself has distilled his *elixir vitae* from this broth of Hell? Is it not intolerable then to force us to employ psychological assumptions as to the nature of mind? For even though it is permitted to receive instruction from a foe, we know that it is prudent to dread the Danaans even when they are bearing gifts.

And yet the facts are hard to argue away. Is not the antithesis between the 'matter' of sensation and the 'form' of thought the old psychological distinction invented by Plato? Again has it not often been shown[14] that in its conception of the 'manifold of sensation' the Kantian system presupposes all the figments of an empiricist psychology, and implies the very psychological atomism which the whole subsequent history of philosophy has shown to be unworkable, and which the simplest introspection shows to be untrue? And is it not in a large measure because he vainly and falsely follows, nay outdoes, Hume in assuming a wholly unformed and unfounded *ὕλη* of sensations, which not all the a priori machinery made in Germany can ever really lick into shape, that Kant's epistemology breaks down?

And what Kant adds to this psychological mixture of Platonic dualism and Humian atomism is a no less unoriginal ingredient. It consists simply of a number of faculties, invented *ad hoc*, upon which devolves the duty (which we are vainly assured they are capable of fulfilling) of organising the formless matter with which they are supplied. But does not this commit the Kantian theory of knowledge to another psychological fallacy, the effete and futile doctrine of faculties? In fine what answer should we be able to make, nay how should we disguise our sympathy, if an *enfant terrible* should arise and declare that so far from being uncontaminated with psychology Kantian epistemology was in reality nothing but a misbegotten cross by faculty psychology out of Humian atomism?

I have never been able to discover from the apriorists what they conceive to be the relation of logical analysis to psychological fact, i.e. the actual process of experience, but if, as experience shows, some reference to the latter occurs, and is indeed inevitable, we may at least demand that the reference should be made clear and explicit. And in addition it may fairly be demanded that if a theory of knowledge cannot but rest on presuppositions as to the factual nature of conscious life, recourse should be had to psychological descriptions of the best and most modern type, before an attempt is made to decide what super- or extra-psychological principles are 'implied in the existence of knowledge'.

§16. It would seem then that the attempt to construe the a priori as a logical analysis independent of psychological fact is not practicable, and cannot really dispense with an appeal to psychological assumptions which are arbitrary and exploded. But the difficulties of this theory of the a priori by no means end here. Supposing even that somehow, aided, let us say, by some spiritual influx from a noumenal world, we had succeeded in constructing a complete account of the structure of knowledge which satisfied every logical requirement, worked perfectly, and was applicable to everything that could be called knowledge, even so we should have gained an aesthetical rather than logical advantage. Our epistemology would be beau-

tiful, because great and symmetrical, but would it be indisputably true? Could we not conceive some other philosopher gifted with an equally synoptic imagination setting himself to compete with our lovely construction, and succeeding, perhaps, in throwing it into the shade of oblivion by a rival structure based on different assumptions, built up by different connections and excelling its predecessors in completeness, simplicity, and aesthetic harmony?[15]

Theoretically at least *any number* of such analyses of knowledge would seem to be possible; for they have only to construct imaginary logical systems, to describe how knowledge *may be conceived* to be put together, without restriction as to the choice of principles assumed and without reference to what actually occurs *in rerum natura.* It would need therefore the decree of some absolute and infallible despot of the intelligible world to secure for whatever a priori account was preferred—on account of its simplicity or aesthetic completeness or practical convenience—a monopoly of epistemological explanation.

§17. However, even this may be conceded. I am in a yielding mood and not disposed to cavil or to stick at trifles, and so will not contest the right divine of Kant and his dynasty—he has too great a bodyguard of philosophy professors.

I proceed only to point out a consequence of the attempt to construe the a priori logically without reference to psychical fact. It follows that its priority is *not in time.* For the whole matter is one of logical analysis. The actual knowledge, which the epistemologist professes to analyse, is then the real fact, and prior to the analysis which professes to explain it. It is the actual presupposition of the analysis which distinguishes in it an a priori and an *a posteriori* element. Thus in actual fact the a priori and *a posteriori* elements in knowledge are co-eternal and co-indispensable, even though not esteemed co-equal. The priority therefore of the a priori is solely an honorific priority *in dignity*. *A priori* and *a posteriori* are merely eulogistic and dyslogistic appellations, which we are pleased to bestow upon factors which we are pleased to distinguish in one and the same act of knowledge. In the concrete reality they are fused together; there is no form without matter and no matter without form—*συνεζεῦχθαι μὲν γὰρ ταῦτα φαίνεται καὶ χωρισμὸν οὐ δέχεσθαι*.[16]

Now if this be the case, I cannot for the life of me see why such inordinate importance should be attached to the distinction of a priori and *a posteriori*, nay to the whole epistemological theory, nor why the naming and precedence of such abstractions should be accounted essentials of philosophic salvation. What now hinders us from inferring from the course of the argument that the procedure and terminology of our epistemological analysis is arbitrary and indifferent, and that the real test of truth

comes, not from any distinctions we assume beforehand, but *a posteriori* and *empirically* from the manner of its working?

§18. As far as the Kantian analysis of knowledge is concerned, the issue can be narrowed down to this question, whether it works, and is the simplest and most convenient analysis that can be devised. If such a contention on its behalf can be substantiated, let it be called true, in the only sense in which mortal man can intelligibly speak of truth; if not, let it be finally housed in that 'Museum of Curios' which Prof. James has so delightfully instituted for the clumsy devices of an antiquated philosophy.[17]

Now this is a question which I could not presume to answer for others without a thorough knowledge of their tastes and customs of thought; but personally I have long felt towards the Kantian epistemology not much otherwise than Alphonso the Wise felt towards the Ptolemaic astronomy when he realised its growing complications; and if by incantations or recantations or decantations I could induce its author to leave the society and the *otium cum dignitate* of the Thing-in-itself, I would fain relieve my feelings by apostrophising him as follows:—

'Oh mighty Master of both Worlds and both Reasons, Thinking of Noümena, and Seer of Phenomena, Schematiser of Categories, Contemplator of the Pure Forms of Intuition, Unique Synthesiser of Apperceptions, Sustainer of all Antinomies, all-pulverising Annihilator of Theoretic Gods of Rational Psychologies, I conjure thee by these or by whatever other titles thou hast earned the undying gratitude of countless commentators, couldst thou not have constructed the theory of our thinking activity more lucidly and more simply?'

§19. At this point it would seem to be time for believers in the a priori to shift their ground and to try another version of its meaning. I expect to be told, and in no measured terms, that I have misinterpreted and maligned Kant, and blasphemed against the sacred image of immutable truth which he has set up. Epistemological analysis is not the arbitrary pastime of an idle imagination, *ἐνδεχόμενον ἄλλως ἔχειν* in myriad ways. A priori truths are facts which can neither be nor be conceived otherwise, and without which no other knowledge can be or be conceived.

"You will not surely," I shall indignantly be asked, "deny that you think by the principle of identity, that you predicate the categories of substance and causality, that you refer your experiences to a synthetic unity of apperception, that you behold them in space and time? And we call these operations a priori, to indicate that without them you cannot know or experience anything at all."

Very well, then, let us recognise the a priori truths as facts. If it is on this condition alone that I may use them, I will gladly grovel in the dust before them rather than that they should withdraw the light of their countenance

and I should be cast into outer darkness. Still I cannot but hope that the said light is not so blinding that I cannot behold their *features*. Permit me, therefore, to trace them and to bask in their beauty.

The a priori axioms are facts—real, solid, observable, mental facts—and woe betide the philosopher that collides with them! In one word they are *psychical facts* of the most indubitable kind.

My delight at having found something tangible at the bottom of so much obscure terminology is so sincere that I have not the heart to be critical about their psychological credentials. Let me waive, therefore, the question, mooted before, whether they have always been described with psychological accuracy, and by the best psychological formulas. I waive also the cognate question whether their description suffices to distinguish them unequivocally from their discredited ancestors, the innate ideas, which since Locke we have all been taught to deny with our lips. I will postpone also an obvious question as to what is now to prevent the theory of knowledge from being absorbed in psychology. For I have no wish to "sycophantise" against an argument which bids fair to become intelligible.

§20. But of course I cannot close my eyes to the consideration that observable psychical facts *have a history*. The a priori axioms, therefore, may be contemplated *historically*, and *psychogenetically*; and then, perhaps, the valet within me whispers, it will turn out that they were not always such superhuman heroines as they now appear, and that they have arrived at their present degree of serene exaltation from quite simple and lowly origins. Accordingly I shade my eyes, thus, and scrutinise their countenances, so, and lo! I begin to discriminate! They do not all seem to be of an age or of equal rank; some, as Plato says,[18] are *πρεσβείᾳ καὶ δυνάμει ὑπερέχουσαι*. Others seem to have been admitted into the Pantheon in historic times, while yet others have been thrown into the background, or even into Tartaros. Shade of Plato! is not even the supercelestial World of Ideas exempt from change? Nay more, their manners and bearing are not uniform, and I swear by Aphrodite, I believe some are rouged and powerless to hide the ravages of age!

To carry on the imagery would be too painful, but I must adhere to its meaning. If the a priori axioms are in any sense psychical facts, or contained in psychical facts, each of them has a theoretically traceable history, and in many cases that history is visibly written on their faces. They are complex growths which constitute *problems* for the philosophic mind; they are in no sense solutions of the problem of knowledge, or of any other.

Whoever then can carry their analysis farther, either historically, by showing how, when, and why they arose, or logically, by systematically connecting them with and deriving them from the other constituents of our nature, or by the mixed method to which the gaps in our knowledge

will probably long compel us, i.e. by supplementing and colligating actual observation by hypothesis, will have deserved well of philosophy, even though he will have had to sacrifice the dogma of the verbal inspiration of the Kantian Criticism.

§21. Any such further inquiry into axioms, therefore, is necessarily preferable to any view which is content to leave them *plantées là* as insuperable, indissoluble, unquestionable, ultimate facts which obstruct the advance of science by their unintelligibleness. For what could be more disheartening than to encounter this serried array of a priori 'necessities of thought' entrenched behind craftily contrived obstructions of technical jargon, and declining to yield or to give any account of themselves?

Can we indeed, so long as we tolerate their pretensions, be truly said to have explained the nature of knowledge at all? For what do they do to explain it? What do they do beyond vainly duplicating, as *μάταια εἴδη*, the concrete processes of actual knowing? At best they seem nothing but the *capita mortua* of a defunct faculty psychology, which offers us only a tautological *δύναμις* in lieu of the *ἐνέργεια* whereof we desired an explanation.

I have experience of the spatially extended—forsooth, because I am endowed with a 'pure' faculty of space perception! I experience succession—forsooth, because I have the 'pure' form of empty time! I refer my experience to my 'self', and the operation is 'explained' by being rebaptised in the name of Synthetic Unity of Apperception!

I know of course that Kant supposed himself to have guarded against this interpretation and the criticism which it provokes, by denying that the 'pure intuition' of Space or Time is a priori only in the sense in which, e.g. the colour sense is prior to the colour perception.[19] But I should dispute his right to do this, and contend that in so far as he succeeded in establishing a difference, it was only at the cost of making the 'pure intuition' prior to experience in the evil psychological sense of 'innate idea'.[20]

§22. "But is not this whole indictment based on a refusal to recognise the axioms as ultimate? And what do you hope to gain thereby? For surely you do not mean to refuse to recognise anything as ultimate? And what more deserving objects could you find for such recognition than the body of necessary truths?"

Certainly I do not in the least mean to commit myself to a denial of anything ultimate. Every inquiry must stop, as it must begin, somewhere. Only I am disposed to deny that we should stop with the 'necessary truths'. And I urge that if by one method a fact (under investigation *in pari materia*, of course) appears ultimate, which by another is easily susceptible of further analysis, then the latter method is logically superior. And I contend also that the so-called a priori truths do not look ultimate, and that it is highly disadvantageous to treat them as such: I am preparing to contend

that upon proper investigation they turn out to be certainly derivative, and that a knowledge of their ancestry will only increase the regard and affection we all feel for them.

It appears, then, that if a priori truth be taken as psychical fact, it is arbitrary to treat it as ultimate, and that we have every motive to connect it with the rest of our mental constitution. We have thereby completed the proof that the apriorist account of our axiomatic first principles is invalid, in whichever way it is consistently taken.

§23. But then it never is consistently taken. Neither in Kant nor in any of his successors is either interpretation of the a priori consistently adhered to. When objections are raised against the manifestly fictitious nature of its psychological foundations, all connection with psychology is indignantly disavowed. If, on the strength of this disavowal, the whole theory of knowledge is treated as a pretty structure which need comply only with logical canons of formal consistency, the actual reality and *de facto* use of the axioms is thrust down our throats.

And the worst of it is that this duplicity of attitude is unavoidable. For it is in truth essential to the whole epistemological point of view. There is no room for a separate theory of knowledge with a peculiar standpoint, if we assign to psychology and logic the whole field that each of them can and ought to occupy.[21] In the so-called theory of knowledge the primary problem is psychological; it is a question of the correctest and most convenient *description* of what actually occurs in acts of knowing, i.e. a question of psychological fact. To logic on the other hand it appertains to estimate the *value* of all these cognitive processes: all questions as to whether the judgments that claim truth actually attain it, as to how cognitions may be rendered consistent, may realise the purposes which we have in knowing, may contribute to the ideals we set before ourselves in knowing, fall into the province of the science which aims at systematising our cognitions into a coherent body of truth. Between these two what remains for epistemology to do? From what point of view, and with what purpose is it to treat knowledge, if both the facts and their valuation are already otherwise provided for? It is not a normative science like logic, and it is not a descriptive science like psychology. And the 'critical' question—*how do we know?*—important though it is in itself, surely does not suffice to found a science. For the question cannot be answered unless it is asked on the basis of definite facts and with a definite aim in view. And whenever it is answered, the answer will always be found to be in terms either of psychology or of logic.

§24. As the outcome of our criticism of the two current theories of the nature of our axioms we have arrived at the conclusion that neither the apriorist nor the empiricist account is tenable. Both have proved unsatisfactory; the former because it represented the axioms as mere brute facts of

our mental organisation (either entirely disconnected or connected only among themselves), the latter as the fictitious imprints of a psychologically impossible experience on a purely passive mind.

At bottom the failure of both accounts springs from the same source. Both are infected with an intellectualism which is a libel on our nature, and leads them to take too narrow a view of its endowment. Because of this common intellectualism they fail to realise the central fact which we always encounter so soon as we abandon the abstract standpoints of the lower sciences and try to conceive our relation to our experience as a whole, the fact that the living organism *acts as a whole*. Or to bring out separately the aspects of this central fact which empiricism and apriorism severally misinterpret, we may say that *the organism is active and the organism is one*.

Empiricism, with its fiction of the *tabula rasa*, fails to appreciate the first aspect; to see that, even in its reactions on its environment, the organism is active, reacting in a mode decided by its own nature and guided by its aspirations towards a harmony of its experience. Its whole attitude is one of volition and desire, which is ultimately a yearning for the Apocalypse of some unearthly ideal of harmonious equilibration in its whole experience, and for the attainment of this end the whole intellectual apparatus is a means.[22]

In short, the *πρῶτον ψεῦδος* of the old empiricism is to have failed to recognise this fact of living activity and its bearing on the growth and constitution of the mind.

Again the organism is *one* and reacts as a whole. This is what apriorism fails to appreciate. In the fierce struggle for existence we need all our forces, and require a compact control of all our resources to survive. The organism, therefore, cannot afford to support a disinterested and passionless intelligence within it, which hovers unconcerned above the bloodstained battlefields of progress, or even sucks a ghoulish and parasitic sustenance from the life-blood of practical striving. *Θεωρία* must not be separated from *πρᾶξις*, but related to it as means to end; thought must be conceived as an outgrowth of action, knowledge of life, intelligence of will, while the brain which has become an instrument of intellectual contemplation must be regarded as the subtlest, latest, and most potent organ for effecting adaptations to the needs of life.[23]

Thus the *πρῶτον ψεῦδος* of apriorism is to take our intelligence in abstraction from its biological and psychological setting, from its history, from its aim, and from the function which it performs in the economy of our nature. It perpetrates a *χωρισμός* between knowing and feeling which renders both impotent and their *de facto* union unintelligible.

But when we try to grasp experience as a whole, we must set ourselves above the encumbering abstractions of a psychological classification that has transgressed the limits of its validity. By conceiving the axioms as essen-

tially postulates, made with an ultimately practical end, we bridge the gap that has been artificially constructed between the functions of our nature, and overcome the errors of intellectualism. We conceive the axioms as arising out of man's needs as an agent, as prompted by his desires, as affirmed by his will, in a word, as nourished and sustained by his emotional and volitional nature.[24] It is manifest that we thereby knit together the various factors in our nature in a far closer and more intimate union than had previously seemed possible. Our nature is one, and however we distinguish, we must not be beguiled into forgetting this, and substituting a part for the whole. And, correspondingly, we open out the prospect of a systematic unification of experience of a far completer and more satisfactory character than can be dreamt of by an intellectualist philosophy. For just as the unity to which we may (and indeed must) now aspire is no longer merely that of the frigid abstraction called the 'pure' intellect, but includes and satisfies the will and emotions, so the corresponding unity of the cosmos will not be a purely intellectual formality (such as every world must possess *ex vi definitionis*), but a complete harmony of our whole experience.

§25. It is a curious fact that in passing from the a priori to the postulate we can appeal to the authority of the same Kant whose characteristic doctrine of an independent theory of knowledge we have been compelled to reject. For Kant, in accordance with his peculiar greatness, which his critics' very criticisms have ever recoiled to recognise, became partly and tardily aware of the fatal error of his intellectualism and of the impossibility of accommodating the whole of life on the basis prescribed by the *Critique of Pure Reason*. After constructing for the 'Pure Reason' a fearful and wonderful palace of varieties, full of dungeons for insoluble antinomies, dispossessed sciences and incarcerated ideals, haunted and pervaded by the sombre mystery of the Noümenon, he came upon the problem of practical life and found himself unable to organise the moral order similarly, i.e. without reference to the *demands* which we make upon experience.

Hence he was constrained to rationalise conduct by the assumption of ethical *postulates*, which boldly encroached and trespassed on the forbidden domain of the unknowable, and returned thence laden with rich spoil—God, Freedom, and Immortality.

This achievement is too often underrated, because it seems to have cost Kant so little—merely a decree for the creation of one more hardly-noticed addition to the lengthy list of faculties, yclept the Practical Reason, conjured into existence *ad hoc*, and apparently as obedient as the rest to her author's word.

But in reality the consequences of enunciating the principle of the postulate are far more momentous, and with a little reflection, it soon appears that Kant has evoked a force which he cannot curb or confine within the

borders of his system. The immediate consequence of admitting ethical postulates which outflank the 'critical' negations of the Pure Reason, is a conflict between the Pure Reason, which had denied the possibility of *knowing* the subjects of the Postulates, and the Practical Reason, which insists that we must practically *believe* and *act on* these tabooed dogmas. Kant essays indeed to delimitate an arbitrary and unscientific frontier between their domains, based upon psychologically untenable hairsplitting between knowledge and belief,[25] but the most indulgent reader cannot but feel that the dualism of the Pure and the Practical Reason is intolerable and their antagonism irreconcilable, while the dual character which this doctrine imposes upon Kant as both the Cerberus and Herakles of the Noümenal world is calculated to bring ridicule both upon him and upon his system.

In view of this fundamental incongruity between the organising principles of knowledge and action, one of two expedients had to be adopted. The first is that preferred by the main body of Kantians to whom the true and epochmaking Kant is the writer of the first Critique.[26] They regarded the Practical Reason as a bit of a joke and accounted for Kant's subsequent recantation of his 'critical' results either wittily like Heine,[27] or dully, like—but no! too many have written on the subject for me to mention names!

The faithful few who tried to balance themselves in the unstable equilibrium of Kant's actual position, who believed his assurances as to the supremacy of the Practical over the Theoretic Reason and its speculative impotence, were left in a sad perplexity. They accepted the dogma, without venturing to define it, and were troubled with an uneasy consciousness that it would not bear thinking out.

Even here, however, there was a notable exception. Fichte, with the enterprise and courage of youth, took the Practical Reason seriously in hand, and combining the doctrine of its supremacy with Kant's hints as to a common root of the two Reasons,[28] proceeded to posit the Self as an '*absolutes Sollen*', whence were to be deduced both the Not-Self and the practical and theoretical activities. The whole construction of the *Wissenschaftslehre*, however, proceeds in a *τόπος ὑπερουράνιος* which is too high for my humbler and concreter purpose—I mention it merely as a partial anticipation of the second and sounder way of conceiving the relations of the Practical and the Theoretical Reason to which I now proceed.

It is impossible to acquiesce in Kant's compromise and to believe by the might of the Practical Reason in what the Theoretic Reason declares to be unknowable. For if the suprasensible and noumenal does not really exist, it is both futile and immoral to tell us to believe in it on moral grounds; the belief in it is an illusion, and will fail us in the hour of our direst need. If the belief in the postulates is to have any moral or other value, it must first of all be used to establish the reality of the objects in which we are bidden to

believe. We cannot *act as if* the existence of God, freedom, and immortality were real, if at the same time we *know* that it is hopelessly inaccessible and indemonstrable. We must therefore choose; we must either trust the Theoretical or the Practical Reason (unless, indeed, we are to conclude with the sceptic that both alike are discredited by their conflict).

If we choose to abide by the former, the undeniable fact of the moral consciousness will not save the postulates of the Practical Reason from annihilation. It may postulate as it pleases, as pathetically or ridiculously as it likes, its desire shall not be granted to it, and it will prove nothing. By postulating the inadmissible it merely discredits itself. To the plea that the moral life must live and feed upon the substance of unverifiable hopes, Science must ruthlessly reply "*je n'en vois pas la nécessité.*" If then the moral life demands freedom, and freedom be an impossibility, the moral life must inexorably be crushed; Kant is *der Alles-zermalmende*, as Heine thought, and nothing more.

If on the other hand the Practical Reason be really the higher, if it really has the right to postulate and ethical postulates are really valid, then we really stand committed to far more than Kant supposed. Postulation must be admitted to be capable of leading to knowledge, nay, perhaps even to amount to knowledge, and indeed the thought will readily occur that it lies at the very roots of knowledge. For of course postulation cannot be confined to ethics. The principle, if valid, must be generalised and applied all round to the organising principles of our life. The Theoretic Reason will in this case be rendered incapable of contesting the supremacy of the Practical Reason by being absorbed by it and shown to be derivative. Thus postulation is either not valid at all, or it is the foundation of the whole theoretic superstructure.

We stand committed, therefore, to the assertion that in the last resort it is our practical activity that gives the real clue to the nature of things, while the world as it appears to the Theoretic Reason is secondary—a view taken from an artificial, abstract and restricted standpoint, itself dictated by the Practical Reason and devised for the satisfaction of its ends.

But to carry through this programme the price must be paid. The *Critique of Pure Reason* must be not merely revised, but re-written. It must be re-written in the light of the principle of the Postulate. Or as Prof. Ward has excellently put it, Kant's three *Critiques* must be combined into one.[29] The simplest thing of all, however, is to proceed independently to show in what manner our fundamental axioms are postulated, now that we may be held to have exhibited the necessity of the principle and its historical justification.[30]

IV

§26. We have already incidentally discovered some of the chief characteristics of the Postulate, such as its universality and necessity (§11), its experimental character (§§5, 8, 11), its psychological origin from practical needs, its function in holding together the intellectual and practical sides of our nature and developing the former out of the latter (§§24, 25). But it will not be amiss to consider some further points of a general character before proceeding actually to trace the development of specimen postulates into axioms.

The first point which perhaps will bear further emphasis is that mere postulating is not in general enough to constitute an axiom. The postulation is the expression of the motive forces which impel us towards a certain assumption, an outcome of every organism's unceasing struggle to transmute its experience into harmonious and acceptable forms. The organism cannot help postulating, because it cannot help trying (§5), because it must act or die, and because from the first it *will* not acquiesce in less than a complete harmony of its experience. It therefore needs assumptions it can act on and live by, which will serve as means to the attainment of its ends. These assumptions it obtains by postulating them in the hope that they may prove tenable, and the axioms are thus the outcome of a Will-to-believe which has had its way, which has dared to postulate, and, as William James has so superbly shown, has been rewarded for its audacity by finding that the world granted what was demanded.[31]

But the world does not always grant our demands. The course of postulation does not always run smooth. We cannot tell beforehand whether, and to what extent, a postulate can be made to work. Compliance with some of our demands is only extorted from the refractory material of our 'world', by much effort and ingenuity and repeated trial. In other cases the confirmation we seek for remains incomplete, and the usefulness of the postulate is proportionately restricted. Sometimes again we may even be forced to desist from a postulate which proves unworkable.

It follows that we may find postulates (or attempts at such) in every stage of development. They may rise from the crudest cravings of individual caprice to universal desires of human emotion; they may stop short at moral, aesthetic, and religious postulates, whose validity seems restricted to certain attitudes of mind, or aspects of experience, or they may make their appeal to all intelligence as such; their use as principles of the various sciences may be felt to be methodological, or they may have attained to a position so unquestioned, useful, and indispensable, in a word so *axiomatic*, that the thought of their being conceived otherwise never enters our heads.

But even the most exalted of these *ἀρχαὶ ἀναπόδεικτοι τῶν μὴ ἐνδεχομένων ἄλλως ἔχειν* differ from their humble relatives in human wishes not in the mode of their genesis, but in their antiquity, in the scope of their usefulness, in the amount and character of the confirmation which they have received in the course of experience, in a word, in their *working* and not in their *origin*. They are the successful survivors in the process of sifting or 'selection' which has power also over the products of our intellectual striving.

But it ill becomes them on this account to give themselves airs and to regard their position as immutable and unassailable. For in many cases they retain their hold over our affections only *faute de mieux*. They are the best assumptions we can work with, but not the best we can conceive. And some one may some day discover a way to work with what are now unsupported postulates, and so raise them to axiomatic rank. Thus whatever axioms we may at any time employ are, and ever remain relative to the nature of our desires and our experience, and so long as changes may occur in either, inexhaustible possibilities of corresponding developments must be admitted in the list of our axiomatic principles. An emotional postulate may become the guiding principle of a new science, a methodological principle may become superfluous and be discarded or be superseded by a better, a primitive desire may die down and cease to nourish a postulate, nay even a full blown axiom may be conceived as becoming otiose under changed conditions of experience.

While our empiricism is thus too radical, and our trust in experience too honest, to permit our theory to assign to any axiom an absolutely indefeasible status, we must yet admit that practically the possibility of modifying them is one that may safely be neglected. The great axioms or postulates are so ineradicably intertwined with the roots of our being, have so intimately permeated every nook and cranny of our *Weltanschauung*, have become so ingrained in all our habits of thought, that we may practically rely on them to stand fast so long as human thought endures. For apart from the fact that it would be gratuitous to suppose a revolution in our experience sufficient to upset them, they are protected by our laziness. To think always costs an effort, and the effort of thought required to undo the structure of mind which has grown up with the ages would be so gigantic that we should shrink with a shudder from the very thought thereof. And all for the sake of what? Merely to show that the mental order was constructed bit by bit by postulation and might be constructed otherwise! And would it not be sheer insanity to upset the authority of the axioms in use unless we were prepared to substitute others of superior value? There is therefore in general little prospect of revolutionary plots against the validity of axioms. The enterprise would too much resemble an attempt by

a coral polyp to cut itself adrift from its reef and to start *de novo*. So we do as the corals do and build on the corpses of our ancestors, hoping that if they were right we also shall profit by following suit, that if they were wrong, the consciousness of our wrongness will at least be borne in upon us with a less painful promptitude than if we had set out to go wrong on our own account.

§27. It follows as a matter of course, and will readily be comprehended, that, if our axioms have the origin alleged, if postulation pervades our whole mental life and forms the *nisus formativus* of mental development, no exhaustive, or even systematic, table of axioms can, or need, be drawn up. In principle their number and nature must depend on our experience and psychical temperament. They will radiate from human personality as their centre, and their common service in ministering to its needs will bestow upon them sufficient unity to debar us from attempts to force them into artificial systems which at best can result only in sham 'deductions' of the rational necessity of the actual, while making no provision for the possibilities of future development.

We may therefore absolve ourselves from the supposed duty of giving a 'deduction of the categories', or even an exhaustive list of axioms and postulates. This is the more fortunate as it justifies us in considering only such select specimens of the growth of postulates and their development into axioms, as may suffice to illustrate the principle, or prove particularly interesting, and enables us to save much time and spare much weariness.

U

§28. Which of our fundamental axioms I select therefore, does not matter much, any more than the order in which they are treated; but as I am anxious not to incur the charge of shirking difficulties, I shall begin with tracing the genesis of one which is perhaps the most difficult, as it is certainly one of the most fundamental and axiomatic—viz. the basis of all thinking in the strict sense of the term, the Principle of Identity.

Not, of course, that I propose to derive it out of nothing. I must entirely disavow the Hegelian (or hyper-Hegelian?) ambition of conjuring all Being into existence out of Not-being by a Dialectical Process working *in vacuo*; I have not even got the whole of concrete reality up my sleeve to insinuate bits thereof into my conclusions, whenever and wherever my reader's attention has been relaxed by some tortuous obscurity of argumentation. I prefer honestly to start from what may be taken to be, so far as psychology can describe it, matter of psychical fact. For I hold that epistemological speculation like every other, must take something factual for granted, if it

is not to be vain imagining, and defy those who contest my presuppositions to state the alternatives they are in a position to offer. If on this account a claim be advanced that my initial basis of psychical fact is a priori, that is, prior to the axiom to be derived, I make no objection. I am content that it should be called so, if the phrase comforts anybody, and if I am permitted to point out (1) that such priority is only relative, *pro hac vice*, and for the purposes of the present inquiry, (2) it is admitted to lie below the level of what can properly be called thought. For I wish to make it quite plain that the psychical fact from which I propose to start, is on what I may perhaps best call the *sentient level of consciousness*, i.e. involves only a consciousness which feels pleasure and pain, which strives and desires without as yet clear self-consciousness or *conception* of objects.

In so doing, I assume, of course, the existence of consciousness or sentiency as a *datum*, and abstain from the alluring expedient of conducting my whole plea on the more concrete plane of biological discussion, obvious and seductive as it might appear to start thence and to argue (1) that the genesis—by a so-called 'accidental variation'—of the concomitance of psychical with physical process was of great survival-value to the lump of matter which first happened to find itself alive and dimly conscious; (2) that subsequently great advantages accrued to organisms in which these mental processes cohered and coalesced and became continuous and centralised, until they culminated in self-consciousness. There is a fatal facility and engaging modernity about arguments of this sort, and they bring out an important aspect of the truth. For it is not too much to say, that every step in the development of our axioms, including even the steps hypothetically conceived to precede consciousness, could be plausibly formulated in terms of survival-value. But though it might be easy in this way to enlist the support of the biologically-minded, I prefer to conduct the argument on a higher and more philosophic plane, in order to avoid even the appearance of the *ὕστερον πρότερον* which is inevitably involved in every derivation of consciousness.

In assuming consciousness, moreover, we are bound to assume also the characteristic features whereby it is psychologically described, e.g. its continuity, coherence, conativeness, and purposiveness. It should be observed further that in pointing out these characteristics of consciousness, we are not attempting to *define* consciousness. For why should we court failure by propounding an inevitably inadequate formula, to contain and constrain that which embraces all existence, generates all formulas, uses them and casts them aside in its victorious development? Whoever is possessed of consciousness himself will recognise to what in him the description of consciousness refers; unless he were capable of this, the most exhaustive definitions would impinge on him in vain and without con-

veying a glimmer of meaning. That consciousness is a psychic fact therefore I shall assume; what it is, I must leave to my reader's own consciousness to inform him. I have then in consciousness a *πού στῶ* of psychic fact beyond which we neither can nor need go.

Nor I think need we allow the objection to perturb us that our present conception of consciousness may be miserably inadequate. In view of its continuing development in the course of experience the suggestion is probably true; but we do not need the adequate conception of consciousness, which could be reached only in the seventh heaven, and there might have become superfluous. And in any case our ignorance of what the ulterior development of consciousness may portend, is no reason for refusing to recognise in it the actual features which are relevant to our purpose.

§29. Now among the factual features *implicit* in all consciousness, though perhaps hard to distinguish in its lower forms and not as yet completely *expressed* in any that we have so far reached, is an *identical self*—or what we are subsequently able so to designate. By this I do not of course mean anything lofty and metaphysical, but merely a convenient description of certain psychical facts. I have no quarrel with the psychologists who argue against an antiquated view of futile and unknowable soul-substance, and insist that the only self they can recognise is just the implicit 'owning' of all conscious processes. If the coherence and continuity of conscious processes can under the proper conditions develop into explicit self-consciousness, that is enough; and so long as the psychologists are able and eager to tell us all about the psychogenesis of the self, I see no reason why their accounts should not be referred to with gratitude and respect.

But my problem is not one of origin, but of the origin of validity; i.e. assuming this conscious self to have been developed, I have to trace out how it proceeds to the conception and postulation of identity. The felt self-identity of consciousness, which, however it arises, is a psychical fact, is, I contend, the ultimate psychical basis for raising the great postulate of logical identity, which is the first and greatest of the principles of discursive thought and introduces order into the chaos of presentations and analyses the *συγκεχυμένον* of primitive experience.

Now this achievement is not a 'necessity of pure thought' so much as of practical life; and without postulation it would remain impossible. The unceasing flow of like impressions by itself would not suggest the recurrence of what has preserved its identity in change; nor would even its *felt* likeness suffice to engender a perception of identity.[32] To obtain identity we must first desire it and demand it; and this demand, though it would be impossible if we did not feel ourselves to be identical selves and fruitless if we could not discover such around us, is a distinct step beyond anything given in passive experiencing.

Thus the conception of identity is a free creation of a postulating intelligence which goes beyond its experience to demand the satisfaction of its desires. But it must have been the felt sameness of the continuous conscious life that suggested the clue to the *recognition of the same* in the *recurrence of the like*.

§30. Edwin meets Angelina in her winter furs whom he admired last summer in fig leaves; he recognises her identity in the differences of her primitive attire. That such things as the persistence of identity through change should be, and what they mean, he could learn only from the immediate experience of his own identity. That they are *is his postulate*, a postulate that fills his heart with the delicious hope that Angelina will smile on him as bewitchingly as before. Why should I introduce sordidness into this romance, by dwelling also on the coarsely practical advantages of recognising objects in one's surroundings?

Yet it is surely plain that the recognition of the same amid variety of circumstances is advantageous; and if desiring it to be true, because he felt his whole happiness depended on it, Edwin made bold to postulate it, he well deserved the rich rewards which poured in as an overwhelming experience of its working confirmed his postulate.

We, of course are far removed from the scene of this primitive idyll, and have long since ceased to notice what a postulate identity was, and for the matter of that still is. We need a world of philosophic quibbling to bring before our eyes the fact that strict identity never yet was found by land or sea, but is always and everywhere a construction of our mind, *made* by voluntary concentration on the essential and rejection of the irrelevant.[33]

Nor, of course, did Edwin know this. He had postulated under the impulsion of practical need, without knowing what he did. The enormity of the logical consequences of his act was hidden from him and only gradually revealed. Still less did Angelina know that she had become the mate of the first *animal rationale*.

Edwin, again, could not foresee that his original postulate would not suffice, and that stupendous efforts of abstraction were still before him if he would complete the postulate of identity and attain to the purity of its present logical use.

In recognising Angelina he had of course (although he realised it not) construed her identity upon the model of his own. But the concrete given identity of self-consciousness is a slender basis for the construction of the logical ideal; indeed it even proves unequal to the requirements of a social life, and needs on this account to be sublimated and idealised into a concept that transcends the given.

The concretely identical, alas, changes in the flow of differences! Edwin has grown bald and Angelina wrinkled, and I grieve to say, they often

quarrel. They are no longer what they were when each succumbed to the other's charms, and identity seems dubious and a fraud. *Eheu fugaces Postume! Postulate!* The cure is a hair of the dog that bit you. Edwin must postulate once more, must postulate a more permanent self which rises superior to such mischances of a mortal life, and, ever at its best, feeds on ambrosia and drains the nectared cups with changeless gods!

Gods, did I escape my own notice saying? What are gods and how do they arise? As men, but greater! Projections of ideals which the actual suggests, but seems to trample under foot! The sign-posts clearly point to the religious postulates and a track which here diverges from our own.

§31. For though it would be fascinating to trace the course of postulation to which religious conceptions owe their birth, we must follow the dry and dusty road of logical postulation by whose side the hardiest flowers of the boldest rhetoric can scarce contrive to blossom. A constant and unchanging self is needed not merely to satisfy what subsequently develops into the religious instinct, but also in order to yield a trust-worthy standard of comparison for the purposes of everyday life. If Edwin likes his mammoth steak well done to-day and underdone to-morrow, no woman can live with him. A stable standard of reference in our judgments in an urgent practical need. Hence the ideal of absolute identity begins to dawn upon the logical horizon, and it is recognized that the possibility of meaning depends on its constancy, and that perfect constancy could be realized only by perfect knowledge.

And, not otherwise, recognition leads on to cognition, and cognition to the same postulate of conceptual identity or constancy. The process which took the recurrence of a similar presentation to mean that of the same individual, will bear extension to the resemblances of natural kinds. From recognizing individuals we proceed to recognize species, a task made easier by the psychological carelessness which overlooks individual differences.[34] Now *every step in this process is a training in abstraction*. At first even Edwin could not recognize his Angelina without divesting her (in thought) of her enveloping differences. But by the time he can discern in their manifold disguises the surrounding objects that are useful or dangerous, he has a pretty sound working control of that weapon of analysis which we now call the principle of identity.

No doubt it still is, and long remains, *ἔνυλον εἶδος*—pure logic not becoming needful so soon as pure mathematics—but sooner or later some one was sure to ask what was this universal 'man' which was so glibly predicated on white, black, yellow, and brown. And then of course the *ὕλη* would be in the fire, and a bloodless ballet of philosophers would commence to dance round the unearthly conflagration.

§32. I forgot to mention, by the way, that soon after recognizing iden-

tity in Angelina, Edwin had (of course) invented language. As to why the expression of his emotions on that prehistoric occasion resulted in the euphonious sound of "Angelina," he can indeed state nothing intelligible. But the association's artful aid he got into the habit of venting this utterance whenever he saw her. And then one morning he not only said it, but meant it! Prodigious! the sound had become a symbol! It puzzled him very much, and he had that, until then, unheard-of thing, a nervous headache, for three days afterwards, which puzzled him still more. He put it down to daemonic inspiration (a notable advance in theology!) and *went on thinking*. Then he proceeded to instruct Angelina, and after a painful process (to her!) got her to answer to her name. And, behold, when their children were born they all learned to talk, i.e. to apply similar and *identifiable* sounds to an indefinite plurality of similar objects. Which, of course, in those days was an immense advantage. And ever since the children of men have been the only anthropoids that could talk and impart ideas—whether they had them or not!

All this happened such a very long time ago that I cannot exactly tell you when, and have had (like Plato) to make a myth of it. Whether in so doing I have not condensed into a single myth what was really the gradual achievement of many generations of mortals it were pedantic to inquire. The illustration serves, I hope, to bring out the main point, viz. that the affirmation of identity, without which there is neither thought nor judgment, is essentially an act of postulation (more *or less* consciously felt to be such) which presupposes as its psychological *conditio sine qua non* the feeling of the self-identity and 'unity' of consciousness.

§33. The derivation of identity I have sketched also goes some way, I think, to explain why in real life men so long enjoyed immunity from the ravages of the predication puzzle. Identity being a practical postulate, modelled on the immediacy of felt self-identity, the postulation of absolute conceptual identity developed very slowly, and there never was any practical danger lest the meaning of the postulate should be pressed into a form calculated to defeat its original purpose. The inherence of attributes in a substance, the relation of a thing to its qualities, are not as such practical problems and the difficulties which the intellectual play of reflective idlers has discovered in them did not exist in practice. In practice the meaning of terms was defined by their use, and the will-o'-the-wisp of a 'truth' dissevered from utility had not yet been permitted to frustrate the very instinct of which it claimed to be the loftiest satisfaction, nor to eviscerate the conception of 'truth' of its real meaning.

And so tacit convention kept the identity postulated true to a sense that allowed of the possibility of predication.

Hence that *S* should be *S* and yet also *P*, nay that it could be *P*, just

because it was primarily *S*, seemed no more remarkable than that the self which was glutted with beef yesterday should to-day be hungry, and just because of this identity, should prepare once more to assume the predicate of 'beef-eater'. It would be vain therefore to impose on the logic of postulation with bogies of an identity excluding differences; the calm reply would be that postulates need not, and must not, be pressed beyond the point at which they fulfill their purpose. An interpretation of identity therefore which excluded predication would stultify our supreme purpose in reasoning as completely as a failure to identify, and would *therefore* be invalid.

And yet we should be equally stern in resisting the allurements to evade the difficulty by relaxing the strictness with which identity is postulated in every valid argument. To the objection that 'abstract identity' would be the death of predication, because if *A* were perfectly and unalterably *A* it could never become anything else, the answer is plain. Abstract identity is never found, but has always to be made. It is made, therefore, in whatever way and to whatever extent it is needed, and remains subservient to the purpose of its maker. It is a postulated ideal which works, though nature never quite conforms to it; before it could be fully realized, the need to which it ministers, the necessity of unceasing predication which is forced upon us by the Becoming of the world, would have had to pass away; and once we had transcended change, identity, together with the processes of discursive thinking which are built upon it, might safely be added to the weapons discarded by the spirit in its advance towards perfection. But as a matter of fact identity continues to be useful just because it continues to be a postulate which never is fully realized. It may therefore blandly be admitted that *A is A* an impotent truism, so long as it is vividly realized that *A shall be A* is an active truth that remoulds the world.

§34. It is in its limitations, perhaps, that the postulatory nature of the principle of identity, and of the conceptual use of mental imagery based on it, appears most clearly. For, as has already been remarked, there ever remains a discrepancy between the identity of the real and the logical idea, a discrepancy to which we have grown accustomed, a discrepancy on which the use of the concept depends, but which, indubitably, renders identity a postulate rather than a 'law'.

For in strict fact nothing ever *is*, everything *becomes*, and turns our most conscientious predication into falsehoods. The real is here, there, and everywhere, until we stop breathless in our chase and *point*, grasping. The 'eternal truths', unable to sustain the pace, have long ceased to reside with us—if indeed they ever gladdened us with theophanies even in the Golden Age of Plato—and have gone down or up (one really cannot be precise about astronomical directions in these Copernican days) into the *τόπος νοητός*, where it is possible to preserve one's dignity without doing any

work. In their stead we have craftily devised conventions, such as that becoming *shall mean* being, and that *for our purposes* relative identity may, under the proper precautions, serve as well as absolute. But we stand unalterable committed to the postulate that identity there shall be, though everywhere we have to make it and by force to fit it on the facts. And so we get on very nicely with truths, as with dresses, that last only for the occasion or for a season, and console ourselves with visions that in the end Being will absorb Becoming and impermanence cease from troubling and predication be completely true and unchanging and perfect and categorical. If by that time we have outgrown the very need of predication, it does not matter to us now; for nothing of the sort is likely to happen to any of us for ever so long!

VI

§35. The myth of Edwin and Angelina has reminded me (perchance by *ἀνάμνησις*) of another of still more ancient date, and if I have obtained forgiveness for telling so much about them, I may venture to relate the story of another being whose name was *Grumps*. Or rather, that would have been his name, if names had then been invented. I cannot quite say who or what Grumps was, but he lived ever so long ago and was very stupid, *very nearly* as stupid as everyone else. He was so stupid that he did not know the difference between himself and other people, but still in his muddled way—he lived, I fancy, in the slime at the bottom of the sea—he wanted to be happy, though he did not know himself nor what his happiness could be. But one day (or night—it does not really matter which it was,—because there was not light) he made a mistake and got outside a jagged flint stone which he could not digest. It hurt him very much and he nearly died. But ever after his agony Grumps knew the difference between himself and other people, and whenever anything hurt him or happened not to his liking (which was very often) he put it down to the other people. For he felt sure he would never hurt himself. And it made such a difference to his way of living that he grew very big and fat. But everybody else was too stupid to know why.

Which fable, be translated into the decent obscurity of technical language, means that the 'external' world is a postulate, made to extrude inharmonious elements from consciousness, *de jure* if not *de facto*, in order to avoid ascribing them to the nature of the self. Not of course, that this is at first consciously so argued, or that the segregation of the two poles of the experience-process into Self and Not-Self need be conceived as arising otherwise than *pari passu*. But we may conceive that it is the *felt unsatisfactoriness*

of experience which suggests the differentiation of Subject and Object and postulation of the latter as an alien 'Other', *causing* the unsatisfactoriness.

The advantage and the confirmation are obvious as before. And if any one will not believe me, let him go to bed and dream; he will find that there too he projects his dream world from himself and ascribes to it externality, just because and in so far as, he is baffled by an experience he cannot control. Contrariwise it may be conjectured that if we got to heaven (having forgotten our whole past) and found that everything took exactly the course desired, no sense of the 'otherness' of our experience could grow up. We should either suppose that we were almighty, that everything was what it was because desired it, or we should cease to make the distinction between self and 'other', i.e. should cease to be self-conscious.

§36. The postulatory aspect of other important axioms I must pass over lightly. The principle of Contradiction may be taken as simply the negative side of that of Identity; in demanding that *A* shall be itself, we demand also that it shall be capable of excluding whatever threatens its identity. Applied to propositions, it demands that we shall be enabled to avoid the jab of incongruous judgments; but the volitional nature of this demand is clearly attested by the frequency with which contradictions are *de facto* entertained by minds which either do not allow them to come into actual conflict, or actually enjoy the conflict. The Principle of Excluded Middle similarly, demands that it shall be possible to make distinctions sharp and disjunctions complete, in order that we may thereby tame the continuous flux of experiences. But in both these cases (as before) our postulates are not precise transcriptions of fact; they are valid because they work, because nature can be made to conform to them, even though not wholly. They derive therefore their real meaning and true validity from the fact that they are applicable to experience, that incompatibles and strict alternatives are met with, that contrary and exclusive attributes are found.

§37. I may here call attention to the fact that in scientific research the postulatory procedure of our intelligence is displayed in the formation of *Hypotheses*. A hypothesis is a suggestion we assume and (however tentatively) *act on*, in order to see whether it will work. It always proceeds from some degree of psychological interest; for about that in which no one is interested no one frames even the most fleeting hypotheses. A real hypothesis therefore is never gratuitous; it is purposive and aims at the explanation of some subject. In other words it presupposes a desire for its explanation and is framed so as to satisfy that desire. The desire for an answer stimulates us to put the question to nature and nature to the question.[35] We assume, that is, that the hypothesis is true, because it would be satisfactory if it were, and then we try and see whether it is workable. If it is not, we are more or less disappointed, but try again; if it is, it rapidly rises to be the

theory of the phenomena under investigation, and may under favourable circumstances attain to axiomatic value for the purposes of the inquiry. A good example of this is afforded by the conception of Evolution. This originated as a wild hypothesis suggested by remote analogies; in the hands of Darwin it became a theory which correlated a vast number of facts; and now its usefulness is so universally recognized that it is accepted without discussion as a methodological axiom which guides research in all the sciences concerned with the history of events.

Now the fundamental part played by Hypothesis in the discovery of the new truth is being more and more plainly admitted by logicians. Novelty neither arises by formal ratiocination *in vacuo*, as an apriorist logic seemed to imply, nor yet is it spontaneously generated by the mere congregation of facts, as logical empiricism stove to maintain. Facts must be interpreted by intelligence, but intelligence always operates upon the basis of previously established fact. The growth of knowledge is an *active assimilation* of the new by the old. Or in other words, our hypotheses are suggested by, and start from, the facts of already established knowledge, and then are tested by experience. We confront them with the new and dubious facts and try to work with them; and upon the results of this trial their ultimate fate depends.

Now this is exactly what we have seen to be our procedure in postulating. We must start from a psychical experience which suggests the postulate (= the previous fact suggesting the hypothesis); we must use the postulate (or hypothesis) as a means to an end which appears desirable; we must apply the postulate to experience (a postulate and a hypothesis not capable of and not intended for use are alike invalid); and the final validity of the postulate (or hypothesis) depends on the extent to which experience can be rendered congruous with it.

May we not infer that the use of Hypothesis in the logic of induction confirms our assertion of the postulatory origin of axioms? Is it not the same process which now yields fresh truth which we supposed to have been active from the first and to have laid the foundations of knowledge? And if it can now establish the validity of the truths it elicits, why should it not first of all have established its own validity by establishing the validity of our fundamental axioms?

§38. The principle of Causation again is pretty plainly a postulate. Causation, as James says,[36] is an altar to an unknown god, a demand for something, we know not what, that shall enable us to break up and to control the given course of events. Now this demand may be satisfied in various ways at different times and for various purposes, in a manner which greatly conduces to the vitality of controversy. Historically, our original model for constructing the conception of cause is our immediate experience in moving our limbs, on the basis of which the far-famed 'necessary connection'—

which at bottom is only the conceptual translation of the feeling of 'having to'—is postulated. This primitive conception of causation, however, does not prove adequate for all our later purposes, especially when, as is usually the case, it is misunderstood and mismanaged. So we proceed to other formulations of causality, which, however, are no less clearly dependent on our experiences and relative to our purposes. 'Cause' means identity when we wish to construct the equations of physics and mechanics; it means regular succession when we are content to view phenomena from without; it involves real agency when, as rarely occurs on the plane of the natural sciences,[37] we desire to grasp the motive forces of phenomena from within. Every event *shall have* a cause—in order that we may be able to product it or to check its production. Similarly the principle of sufficient Reason demands that everything shall be capable of reasoned connection with all things—i.e. we decline to live among *disjecta membra* of a universe.

How intensely postulatory these axioms are, is best seen when we consider what is too often neglected, viz. the limits of their use. The unchanging is the uncaused; no reason is required for that which is 'self-evident'. But, psychologically, everything is self-evident which provokes no question, and what alone would be absolutely self-evident would be the absolutely satisfactory. Thus the only complete logical truth would be one which left no room for further questions by reason of its absolute psychological satisfactoriness. And conversely nothing arouses the questioning spirit more readily than the unsatisfactory. As has well been said, there is a problem of evil, but not of good. It is precisely in so far, therefore, as experience is unsatisfactory that we have need of a principle of Sufficient reason. It has to be left, with so much of the panoply of practical life, at the gates of Heaven.

Comprehended as a postulate, therefore, the principle of Sufficient Reason no longer exercises an unsympathising tyranny of pure reason over reluctant desires; it does not drive us to seek for reasons that can never satisfy without end; it only enables us to assign a reason whenever we will, and the situation seems to us to need one.

The *λύσις* of the *ἀπορία* of the infinite regress of causes is similar. It means "you may go back as far as ever you will"; it does *not* mean "you must go back, whether you will or not." As for the unchanging (or what is taken to be such) the causal demand has no power over it; it has no cause because it has no changes with which it is practically necessary to grapple.

§39. Upon the assumption of the existence of universal laws of nature, otherwise known as the Uniformity of Nature, I may bestow a somewhat fuller treatment, for reasons which can perhaps be conjectured by those of my readers who have been engaged in philosophic instruction.

To primitive man—we may suppose ourselves to have got down to semi-historical times—nature inevitably still appears very chaotic and

uncomfortable. He desires an explanation of the circumstances that oppress him, and is prepared to clutch at any straw. He partially gratifies this desire by projecting as the 'causes' of such happenings 'spirits' naturally and necessarily conceived *ex analogia hominis*, and wild and malevolent enough to account for the chaos and the discomfort.

But after all the chaos is not complete; it is interspersed with gleams of uniformity. Though under the promptings of misplaced paternal pride, Helios may conceivable entrust his chariot to the unpracticed hands of Phaethon, yet within the memory of the oldest inhabitant the sun has risen and set with regularity. So too a number of organic rhythms, breathing, cardiac pumping, digestion, hunger, etc., have by this time reached a regularity which can hardly be overlooked. There is therefore no lack of psychical experience to *suggest* regularity, and the whole force of association, driving the mind into habitual courses, disposes it to expect a recurrence of the familiar.

Perfect regularity, therefore, can be postulated; and the temptation to do so is great. For while no amelioration of man's miserable state can be expected from the scientific caution that dares not step beyond the narrow bounds of precedent, the postulation of universal laws is fraught with infinite possibilities of power. If nature is regular, it can be trusted; the future will resemble the past—at least enough to calculate it—and so our past experience will serve as guide to future conduct. There is, moreover, a glorious simplicity about calculating the future by the assumption that out of the hurly-burly of events in time and space may be extracted changeless formulas whose chase abstraction soars above all reference to any 'where' or 'when', and thereby renders them blank cheques to be filled up at our pleasure with any figures of the sort. The only question is—Will Nature honour the cheque? *Audentes Natura juvat*—let us take our life in our hands and try! If we fail, our blood will be on our own hands (or, more probably, in some one else's stomach), but though we fail, we are in no worse case than those who dared not postulate: uncomprehended chaos will engulf both them and us. If we succeed, we have the clue to the labyrinth. Our assumption, therefore, is at least a methodological necessity; it may turn out to be (or be near) a fundamental fact in nature. We stand to lose nothing and to gain everything by making a postulate which is both practical necessity and an obvious methodological assumption, pointing out a way of investigating a subject with which we must grapple, if we will to carry on the struggle which is life.

Quid plura? Experience has shown that Nature condones our audacity, and step by step our assumption has been confirmed. The 'reign of law' has turned out to be as absolute as ever we chose to make it, and our assumption has worked wherever we have chosen to apply it. Thus the speculations to which we were first driven in the hungry teeth of savage facts by the

slender hope of profit, by the overpowering fear of the ruin which stared us in the face, have slowly ceased to be speculative and become the foundations of the ordinary everyday business of life. Our postulates have grown respectable, and are now entitled axioms.

§40. By way of a change I may pass to consider the function of the postulate in a very different region, viz. the construction of our conceptions of Space and Time, which since Kant it has become difficult not to treat of in analogous fashion. In Kant, of course, it will be remembered that they are treated as twin instances of 'pure' '*intuition*' or '*perception*' (*reine Anschauung*) giving rise to synthetic judgments a priori and needing to be systematically distinguished both from perceptions (*Wahrnehmung*) and from conceptions. Nevertheless it will hardly escape an unprejudiced observer that a 'pure intuition' is strangely intermediate between a perception and a conception.

Of this curious fact the explanation which I shall venture to suggest is that in reality the *reine Anschauung* is a hermaphrodite, *both* perceptual and conceptual, and that Kant's doctrine on the subject rests on a systematic confounding of these two aspects. He argues first that Space and Time cannot be perceptions by appealing to their conceptual nature, and then that they cannot be conceptions by appealing to their perceptual character. So he has to construct the pure intuition as a third thing which they may safely be, seeing that they can be neither percepts nor concepts. But he has overlooked the possible alternative that, as so often, the same word has to do duty both the precept and concept, and that by 'Space' and 'Time' we mean now the one and now the other. This ambiguity having escaped his notice,[38] the result is that the whole doctrine of the Transcendental Aesthetic is pervaded by a thorough-going confusion of psychology and logic.

As against Kant, I shall contend that the nature of Space and Time remains an inexhaustible source of paradox and perplexity, until it is recognized that in each case what has happened has been that certain psychological data have been made the basis of conceptual constructions by a course of methodological postulation.

§41. In the case of Space these psychological data consist of the inherent extension or spatiality of the perceptions of the senses of sight and 'tough' (= pressure + muscular contraction + articular motion), in consequence whereof we can no more *perceive* the unextended than (despite Kant) we can *perceive* empty Space. These perceptual spaces are fused by the necessities (needs) of practical life, which force us to correlate the visual and tactile images of objects, into a single perceptual or real space, in which we suppose ourselves and all objective realities to be immersed. Thus spatiality is a given attribute of the real world as empirical originally as its colour or its weight.

But this real space is very far from being identical with space of the geometers. Geometrical space is a conceptual construction founded upon space-perception and aiming at the simplest system of calculating the behaviour of bodies in real space—a matter obviously of the greatest practical importance. Hence it is built up by a series of postulates into an ideal structure which *at no point coincides with our perceptual space and in many respects is even antithetical to it*.

Thus it is commonly stated that 'Space' (conceptual) is one, empty, homogeneous, continuous, infinite, infinitely divisible, identical, and invariable. Now every one of these attributes is the product of an idealizing construction the purpose of which is to facilitate the interpretation and manipulation of the movements of bodies in real (physical or perceptual) space, which stands in the sharpest contrast with our conceptual construction by being many, filled, heterogeneous, continuous only for perception (if atomism be true), probably finite,[39] *not* infinitely divisible (atoms again!) and variable.

And this is how and why we construct the qualities of our ideal geometrical space. We make it *one* and identical by correlating our sense-spaces, by fusing the multitude of fields of vision and by refusing to recognize the spaces of our dream experiences, in order that we may have a common standard to which we can refer all our space-perceptions. We make it empty and invariable by abstracting from that which fills it and changes in it, in order that nothing may distract us from the contemplation of its pure form. We make it infinite and infinitely divisible by carrying actual motions and divisions on *in thought*, because it is sweet to image that no limit exists beyond which we cannot penetrate. We make it continuous by idealizing an (apparent) feature of perception, in order to confer upon it a mystic invulnerability. And lastly we make it homogeneous—structureless, and *therefore* able to receive any and every structure—in order to relieve our minds and practical forecasts of the utter and incalculable heterogeneity which renders the physical qualities of real space different at every point. And last of all we make perceptual and conceptual space share in the same name, because for practical purposes we want to identify the latter with the former and to affirm its validity, and are not concerned to save philosophers from confusion.

And yet when the philosopher has laboriously disentangled the varied threads that are woven into the texture of practical life, and questions, us, we can realize the character of our constructions. We can see full well that all these attributes which conceptual space postulates are impossible in perceptual space; that is just the reason why we demand them. They are pure abstractions which idealize the actual and serve the purpose of enabling us to simplify and to calculate its behaviour. And so long as our

assumptions come sufficiently near to reality for our practical purposes, we have no reason to emphasis the distinction between the two senses of 'Space' and indeed are interested rather in slurring over the divergence between pure and applied mathematics.

§42. Our assumption, then, of geometrical space is true because it works and in so far as it work. But does it work? In modern times ingenious attempts have been made to contest this assumption, and to reconstruct geometry 'on an empirical basis' or at least, to construct alternatives to the traditional 'geometry of Euclid'. These 'metageometrical' speculations have indulged in many crudities and extravagances and have not in all cases succeeded in freeing themselves from the very confusions they were destined to dissipate. But they have achieved a great work in stirring up philosophers out of their dogmatic trust in 'the certainty of mathematics', and forcing them to realize the true nature of geometric postulates.

The chief philosophic results of the Non-Euclidian metageometry are briefly these. The Euclidian space-construction rests upon 'the postulate of Euclid' as to parallel straight lines, which Euclid postulated in the innocency of his heart, because he wanted it, and the indemonstrableness of which had ever since been considered a disgrace to geometry. The simple explanation of this fact proffered by metageometry is that conceptual space is a generic conception capable of being construed in several specific ways, and that Euclid's postulate (or its equivalent, the equality of the angles of the triangle to two right angles) stated the specific differentia of the space Euclid proceeded to construct. But out of the same data of spatial perception other systems of conceptual geometry might have been constructed, whose distinct postulates (as to the number of 'parallels' to be drawn through a given point or as to the sum of the angles of the 'triangle') diverged symmetrically from that of Euclid and would give rise to coherent, consistent and *necessary* geometries, logically on a par with Euclid's and differing from the latter only in the point of usefulness.

For, however much the new geometries of 'spherical' and 'pseudo-spherical' space[40] might claim to rival the logical perfections of the traditional geometry, they have not been able to contest its practical supremacy. Their assumptions are much less simple, and their consequences are much less calculable and much less easily applicable to the behavior of objects in real space. It seems to be possible indeed to conceive experiences which would be most easily and conveniently interpreted on metageometrical assumptions, but it has had to be reluctantly acknowledged that so far no such experiences have fallen to our lot. Euclidian geometry is fully competent to do the work we demand of our geometrical constructions.

But that does not make it more *real* than its rivals. They are *all three* conceptual constructions which may or may not be *valid* and *useful*, but

which are alike incompetent to claim *existence*. Hence the question which has been so much debated in metageometrical controversy, viz. 'whether our space is Euclidian or not' is strictly nonsense. It is like asking whether the Sistine Madonna *is* the mother of Christ. To ask whether our space is Euclidian or Non-Euclidian is like disputing whether this assertion may be more truly made of the Sistine Madonna or of the Madonna della Sedia. For like Raphael's pictures all our conceptual geometries are ideal interpretations of a reality, which they surpass in beauty and symmetry, but upon which they ultimately depend, and it would be hard to adduce more eloquent testimony of the dependence of these theoretic structures on practical needs than the fact that from the first the conceptual interpretation of spatial experiences instinctively adopted by mankind should have been that which subsequent analysis has shown to be the simplest, easiest, and most manageable.

§43. For illustrative purposes the construction of the conception of Time is vastly inferior to that of Space. The conception of Time involves a much more arduous effort of abstraction and its lack of '*Anschaulichkeit*' is such that it can hardly be conceived, and certainly cannot be used, without an appeal to spatial metaphor. Hence I must confine myself to a few hints showing the close analogy of the method of its conceptual construction with that of Space, in the hope that they may prove *φωνᾶντα συνετοῖσιν*.

Nothing but misunderstanding of the nature of Time is possible unless it is recognised that the word covers *three* different things which may be distinguished as *subjective*, *objective*, and *conceptual* Time.

Of these subjective Time (or *times*, since every centre of experience possesses an indefinite plurality of his own, if we do not—as for practical purposes we always do—exclude the times of dreams, etc.) alone can claim to be a matter of immediate experience. It consists in the psychical facts of succession and memory, and its 'present time' always has duration. It forms the psychological basis of all time-constructions, but for practical purposes it is well nigh useless. Our subjective time estimates vary too enormously for us to live by them. The time which to the philosopher may pass all too rapidly in metaphysical discussion, may bore the schoolboy to extinction; and conversely the philosopher might prefer extinction to listening for three hours a-day to a discussion of cricket matches or to a Parliamentary debate.

Hence for the purposes of what Prof. Ward calls intersubjective intercourse it is necessary to devise or somehow to advance to a 'Time' which shall be more objective. *Objective* Time is what we live by, and what we read upon the faces of our 'time-pieces' (provided they 'keep time'!) correcting thereby our subjective estimates of the flow of successive experience. As this example shows, objective time depends upon constructions (including that of our watches) and motions, or more precisely, upon the *synchronism* of

motions and the assumption of physical constants. But it remains wholly relative, and this enables the philosopher to deduce some curious and interesting consequences.[41]

To reach absolute 'Newtonian' Time, flowing equably and immutably from a infinite and irrevocable Past, through a 'punctual' (i.e. durationless and infinitely divisible) and yet exclusively real Present, to an infinite Future, conceptual postulation has to be called into play. The absoluteness and equable flow are demands for a constancy which objective Time will not show; the construction of Past, Present, and Future results from the need to arrange the facts of memory; the infinity and infinite divisibility, as in the case of space, result from a thinking away of the contents and limits of the actual experience. But on the whole the usefulness of conceptual Time seems very limited, and is counterbalanced by troublesome antinomies as soon as it is separated from the experience it is intended to interpret.[42]

§44. I pass over the axiomatic postulates of arithmetic, the methodological postulates which are found in every science and the metaphysical postulates involved in the conception of substance: the first, because I may refer to Prof. James's account of them in the *Principles of Psychology* (ii. p. 653 foll.) and have no desire to 'outdo the good man'; the second, because of their number and the amount of special knowledge which it requires to expound and appreciate them; the third, because in all its traditional forms I am sceptical as to the usefulness, and therefore as to the validity, of the conception of substance, and cannot stay to propound measures for its reform.[43]

§45. On the other hand too much may be gleaned from the consideration of postulates which are not yet acknowledged to be axiomatic, nor indeed universally to be valid, for us to pass them over. I may mention in the first instance the assumption of Teleology.[44]

Teleology in one sense is an indubitable postulate of the highest significance. In the interpretation of nature, we must always assume a certain conformity between nature and human nature, in default of which the latter cannot understand the former. Thus human nature is the sole key to nature which we possess, and if it will not unlock the arcana, we must resign ourselves to sceptical despair. If, therefore, every attempt to know rests on the fundamental methodological postulate that the world is knowable, we must also postulate that it can be interpreted *ex analogia hominis* and anthropomorphically.[45] And moreover *the closer* the correspondence between nature and human nature can be shown to be, *the more knowable* will the world be, and the more we shall feel at home in it. Hence, it is a methodological demand to anthropomorphise the world as far as ever we can.

Now human nature, in so far as it is 'rational', is teleological—it pursues ends which appear to it reasonable and desirable, and tends to become more and more systematically purposive the more highly it

develops. Of course, therefore, we must try to find this action for the sake of ends throughout nature, or if we fail, to find the most efficient approximation to it we can. Now, with regard to the actions of our fellowmen, and indeed in the case of all animal life, the full ascription of teleology is not only practicable but practically unavoidable. But with regard to the other departments of nature, and indeed nature as a whole, modern science has persuaded itself that teleological explanations are at present unworkable and therefore 'unscientific'. The ideal of scientific explanation is 'mechanical', and this is taken to be anti-teleological.

So far, therefore, teleology *remains a postulate*, which it is not possible to carry through, and to render an axiom of biological or physical research. The situation is deplorable, but not desperate. For, in the first place, the antiteleological bias of natural science is largely due to the perverse use professing teleologists have made of their postulate. Instead of treating it as a method whereby to understand the complex relations of reality, they have made it into an *ἀργὸς λόγος* which shut off all further possibilities of investigation, by ascribing everything to a 'divine purpose', and then, in order to shirk the laborious task of tracing the working of the divine intelligence in the world, adding the suicidal 'rider' that the divine purpose was *inscrutable.* Teleological explanation was thus rendered impossible, while the mechanical assumptions were found to be capable of working out into valuable results, it is true of a lower order of intelligibility. In the second place, although the teleological postulate is not useful in the present stage of scientific development, that is not to say that it cannot be rendered useful hereafter. It is open to any one to adopt the method, and if he can show valuable results attained thereby, he will not find true scientists slow to recognise its validity. Hitherto indeed the method has failed, not so much because men could not use it, as because they would not, or at least would not use it properly. If, at any time, they should want to use it, they would probably find that it was useful far beyond the limits of its present application.

§46. But even these limits are in reality far wider than is ordinarily recognised. In another way from that which we have just been considering the validity of teleology is raised above the very possibility of question. What are these mechanical explanations which have so successfully preoccupied the fertile fields of science? They are devices of our own, *methods* which we have tried and found workable, ideals conceived by our *intelligence* to which we are coaxing reality to approximate; they are pervaded by human purposiveness through and through, and prove that, so far as we have tried, nature conforms to our thoughts and desires, and is *anthropomorphic enough to be mechanical*. In being mechanical it plays into our hands, as James says, and confesses itself to be intelligible and teleological *to that extent at least*. There is no intelligibility without conformity with human nature, and

human nature is teleological. A mechanically law-abiding universe does conform to some of our demands and is so far intelligible. We must assume, therefore, that this conformity will extend further, that, if we try sincerely and pertinaciously and ingeniously enough, we can force nature to reveal itself as *wholly* conformable to our nature and our demands. Nothing less than that will content us, and nothing less than that need be assumed. Nay, any attempt to stop short at something less, e.g. at a world which was mechanically intelligible, or even intellectually intelligible, but ignored our moral and emotional demands, would seem to jeopardise all that the pertinacity of our sciences has achieved. A world which can be 'fully explained', but only in mechanical or barely intellectual terms, is *not* fully intelligible, is *not* fully explained. Nay, at bottom it involves the most abysmal unintelligibility of all, to my thinking. It lures us into thinking it rational, only to check our progress by insuperable barriers later on. Compared with the tantalizing torment of this supposition, and the derisive doubt it reflects on all our earlier 'successes', a skepticism which consistently assumes a fundamental incommensurability of man and his experience, and a consequent unknowableness of the world, and patiently endures their practical consequences, would seem more tolerable and dignified.

We must, therefore, assume all or nothing—we have some (unless we choose to lose it by lack of faith); we must hope and strive for all. Shall we then, in face of all the successes of our sciences, infer that all intelligence (our own included) is a fond delusion for which there is no room *vis-á-vis* of true reality? *O miseras hominum mentes, o pectoral coeca*! Can it really be that they *cannot* see that every triumph of the most rabidly 'anti-teleological' mechanical method is, from the 'synoptic' standpoint of philosophy, so much more welcome testimony to the power of the human mind and will to grapple with its experience, and confirms the validity of its teleological assumptions? At all events such blindness, whether it be involuntary or voluntary, is not possible to one who has grasped the truth that theoretic truths are the children of postulation. His eyes are opened, and the question whether teleology is valid is finally closed. For is not this whole theory one continuous and overwhelming illustration of the doctrine that without purposive activity there would be no knowledge, no order, no rational experience, nothing to explain, and no means of explaining anything? What, in a word, is his whole account of mental organization by a demonstration of the *teleology of axioms*?

§47. I must pass over with a mere mention sundry postulates of a religious character, whose position has been rendered still more dubious than that of teleology by the prevailing misconceptions as to the validity of postulation. An intelligent reader will perhaps gather from what has been said in the last section why the Personality of God should be esteemed an indis-

pensable postulate. The fact again that the goodness of God is a methodological postulate[46] will be found to throw much light on the rationality of all religions, just as the pitiably inadequate way in which it has actually been carried out illustrates the irrationality which unfortunately ever clings even to the best of them.

Is Immortality a postulate, as Kant maintained? If so, in what sense and to what extent? These are questions well worthy of being pondered, not without a cautious discrimination between immortality in Heaven and in Hell. But at present we are too profoundly ignorant as to what men actually desire in the matter, and why, and how, to decide what they ought to desire. Hence, pending the publication of the results of a statistical inquiry undertaken by the American Branch of Society for Psychical Research, which I hope will yield copious and valuable data, profitable discussion of these questions must be postponed.[47]

VII

§48. Having in the above sections exemplified the method by which the postulatory nature of representative axioms may be displayed, I may proceed to round off my essay with some concluding reflections.

I will begin with a couple of cautions. In the first place in default of a knowledge of the historical details of the psychological development of our earlier postulates, I have had to content myself with schematic derivations in logical order. The real procedure was probably far more complicated, casual, and gradual, and far less conscious than I have represented it. In fact I see little reason to suppose that any of the makers of the easily postulates had any consciousness of the logical import of their procedure or knew why they made them. We know this often to have been the case, that, e.g. the logical and geometrical postulates were used long before they were reflected on scientifically and still longer before they were *understood*. But this is no real difficulty, and we can study the psychological processes involved by observing any one who is persuading himself of the truth of what he would like and would find it convenient to believe, e.g. that he loves where money is, or that being in love his mistress is perfection. It is only for the cold-blooded analysis of an unconcerned observer that logical chasms yawn in such processes; the agent himself in the heat of action is wafted over them unawares by the impetuous flow of instinctive feeling, and would doubtless reject our analysis of his motives with the sincerest indignation.

For to an unreflective and uncritical mind whatever looks likely to gratify desire presents itself with an inevitableness and aesthetic self-

evidence which precludes all doubt. And we are all unreflective and uncritical enough to accept the self-evidence also of the devices we denominate 'truth', until at least the doubt as to their real character has been forced upon us.

It should be clear from this how I should conceive the logical question with regard to postulation to be related to the psychological, and how I should reply to an objector who was willing to grant that postulation is the method whereby we come by our axioms psychologically, but denied that this affected the logical problem of their justification.

To this we should reply that we also distinguish between the motives which assume and the trials which justify an axiom. A postulate does not become axiomatic until it has been found to workable and in proportion as it is so. But we deny that the two questions can be separated and logic be cut adrift from psychology and dissipated in the ether of unintelligible. Psychological processes are the vehicles of truth, and logical value must be found in psychological fact *or nowhere*. Before a principle can have its logical validity determined, it must be tried; and it can be tried only if some one can be induced to postulate it. Logical possibilities (or even 'necessities') are nothing until they have somehow become psychologically actual and active. A 'truth' which no one ever conceives is nothing. It is certainly no truth.

Hence it is impossible to treat the logical question of axioms without reference to the actual processes whereby they are established, and their actual functioning in minds which entertain the logical in close connection with their other ideals. If therefore it is by postulation that we *do know*, we cannot but base on postulation our theory of how we *ought to know*. Here, as elsewhere, the ideals of the normative science must be developed out of the facts of the description science. Regarded from the standpoint of the higher *purpose* of the former,[48] the psychological processes must be purged of the hesitations, inconsistencies and irrelevancies which clog them in their actual occurrence, and when this evaluation is completed, it yields the norms which *ought to be*, but as yet *are only in part*. Thus (as must indeed have become obvious to a careful reader of the preceding sections) the logical account of Postulation is an idealized version of the course of actual postulating. But for this very reason it has a guiding power over the actual processes, which the fancy processes of an abstracted logic legislating vainly in the void, can never claim.

§49. Secondly, I am of course aware that in applying to the problem of knowledge the *method of origins* I am debarred in one sense from giving a *complete* explanation. For granting that I have succeeded in connecting our cognitive apparatus with the earlier functions of consciousness by means of the principle of the postulate, it is open to any one to demand the reason why we should be capable of feeling and volition, and so gradually to drive

me back into the formless, mindless, undifferentiated void which is conceived to precede all evolution. That this difficulty should occur in *all* theories is no answer, and a poor consolation.

The true answer is that the method of origins is of relative validity and that in the end we *never* find out 'what a thing really is' by asking 'what it was in the beginning'. Nor does the true value of the method reside in the (illusory) starting-point to which it goes back, but in the knowledge it acquires on the way. The true nature of a thing is to be found in its validity—which, however, must be *connected* rather than *contrasted* with its origin. 'What a thing really is' appears from what it *does*, and so we must study its whole career. We study its past to forecast its future, and to find out what it is really 'driving at'. Any complete explanation, therefore, is by final causes, and implies a knowledge of ends and aims which we can often only imperfectly detect.

All this of course applies also to the case of knowledge. Knowledge cannot be derived out of something other and more primitive; even if the feat were feasible, it would only explain *ignotum per ignotius*. Hence to analyse it into 'elements' and 'primary forms' is in a manner illusory; so long as its structure is not completed, the final significance of its forms cannot be clearly mirrored in its structure. Ultimately, therefore, it is impossible to explain the higher by the lower, the living organism of growing truth by the dissected members. If we desire completeness, we must look not to the *ὕλη*, as in different ways our theories of knowledge all have done,[49] but to the *τέλος*. And to claim definitive finality for any present theory of knowledge would seem to crave no slight equipment with the panoply of ignorance.

But is the end in sight? Can we infer from what knowledge has been, and now is, what it should be, and God willing, will be? We can of course (as explained in the last section) construct, to some extent, the ideal on the basis of our knowledge of the actual. But though therefore an answer is not perhaps wholly inconceivable even to this question, an exploration of the seventh Heaven is hardly germane to the present inquiry.

§50. I cannot more fitly close this rough sketch of a great subject than by adding a few words as to the probable effect on philosophy of a more general adoption of the principle I have advocated. It may, I think, reasonably be anticipated that it will have a reviving and most invigorating influence upon an invaluable constituent of human culture which too often has been betrayed by the professing champions who were bound and paid to sustain its banner against the attacks of fools and Philistines. Philosophy is once again, as so often in its history, 'the sick man' among the sciences: it has suffered unspeakable things at the hands of a multitude of its doctors, whose chief idea of a proper regimen for the philosophic spirit has been to

starve it upon a lowering diet of logic-chopped conundrums, to cut it off from all communication with real life and action, to seclude it in arid and inaccessible wastes whence there is an easy descent to the House of Hades, and by constant blood-letting to thrust it down into the gloomy limbo where a pallid horde of useless, half-hypostasised abstractions vainly essays to mimic the wealth and variety, the strength and beauty of reality. That philosophy has not perished out of the land under such treatment testifies with no uncertain voice to its divine destiny and to the glow of ambrosial fire that courses in its veins. We may expect, therefore, a marvellous recovery once it has by the might of postulation shaken off the twofold curse under which it has for so long laboured, the curse of intellectualism and the curse of a will that does not know itself, and in its self-diremption turns against itself, to postulate the conflicting and incongruous.

Intellectualism, to which it has already several times been necessary to refer in unappreciative terms, is naturally the besetting sin of philosophers, and a perennial idol of the academic theatre. Intellect being the distinguishing characteristic of the philosopher and the indispensable means of holding a mirror up to nature, he exhibits a constant tendency to substitute the part for the whole and to exalt it into the sole and only true reality. His infatuation is such that it seems to him to matter not one whit, that it proves patently and pitiably unequal to its *rôle*; that to maintain itself in the false position into which it has been forced, it has to devastate reality and call it truth; that it has to pervert the empty *schemata* of 'universal' abstractions from their legitimate *use* as *means* to classification, and erecting them into *ends*, to substitute them for the living reals; that even when it has been permitted to cut and carve the Real at its pleasure, and to impose on us two-dimensional images in lieu of the solid fact, it has in the end to confess that the details and individuality of the Real elude its grasp.

But when, for the sake of bolstering up an inhuman and incompetent, and impracticable intellectualism, an attempt is made to cut down the scope of philosophy to an attenuated shred which intellectualism can contemplate without dismay, when we are required to believe that philosophy need aim only at understanding,[50] and at understanding in general, without either condescending to the particular, or considering that which 'passeth all understanding', it is high time to protest. It is the individual concrete experience in all its fullness which every man worthy of the name wants philosophy to interpret for him; and a philosophy which fails to do this is for him false. Intellectualism is necessarily false because it only operates with conceptions, whose purpose and essential construction incapacitate them from accounting for the individuality from which they have abstracted. It reduces the philosopher to an impotent spectator of a *supra-rational* universe which he can interpret only as *irrational*.

And in this case the on-looker sees nothing of the game, because he sees a game which he does not understand, and cannot understand unless he has tried to play it. It is a false abstraction of intellectualism to divorce thinking from doing, and to imagine that we can think the world truly without acting in it rightly. But in reality this is quite impossible. "Pure' thought which is not tested by action and correlated with experience, means nothing, and in the end turns out mere pseudo-thought. Genuine thinking must issue from and guide action, must remain immanent in the life in which it moves and has its being. Action, conversely, must not be opposed to thought, nor supposed to be effective without thought; it needs thought, and elaborates it; it is not a "red mist of doing" which obscures the truth, but the radiance which illumes it.

> In Lebensfluten, im Thatensturm,
> Wallt es auf und ab . . .
> So schafft es am sausenden Webstuhl der Zeit
> Und wirket der *Menschheit* lebendiges Kleid.
>
> *Faust*, Act i. Scene 1 (with the necessary variations).

To trace, therefore, to their root in the postulation of personal need the arrogant pretensions of 'pure thought', and thus to get rid of the haunting shadow of intellectualism, reopens the way to a philosophy which remains in touch with life, and strenuously participates in the solution of its problems.

§51. Such practical success in its completeness is, of course, a sufficiently remote contingency; but there is a further reason for the expectation that it will be greatly facilitated by the proof of the volitional foundations of our intelligence. For it disposes also of another serious and inveterate source of philosophic confusion, and constant stimulus to philosophic despair, viz. the notion that philosophic difficulties arise out of the *incompetence of the reason*. Now there is some foundation for this notion. A certain class of philosophic problems, to wit, those which have no earthly concern with practical life (like, e.g. the Absolute and its habits), and so cannot be tested by action, and really *ultra vires* of an intelligence which was devised and developed to harmonise experience. But then we have all along contended that such problems are not real problems at all, but miasmatic exhalations of a false intellectualism, which has misconstrued its own nature and powers. Such problems are insoluble, because in the end they are unmeaning. But there are other cases where the intellect seems to fail us in questions of the most pressing practical importance. Hence so long as the dogma of the primacy of the intellect prevails, it seems hard to acquit the human reason of the charge of being infected with fundamental disabilities and insoluble antinomies. For is it not easy to draw up a formidable array of incompatible assertions and to provide each with a 'proof' in logically unexceptionable terms?

But of these 'difficulties' it now seems possible to propound a profounder explanation. The real root of the trouble may be found to lie in the will rather than in the reason, whose innocent amiability is always ready to provide an intellectual formulation for the most discordant aims and the most obscure desires. Let us, therefore, insist that before the reason is condemned untried, and philosophy is finally reduced to a trivial game which may amuse but can never really satisfy, it is necessary to inquire whether the 'antinomies' do no arise rather from volitional discord than from intellectual defect, whether the contradictions of the reason are not forced upon it by an indecision which knows not what it wills, a division of the will which insists on willing incompatibles, or a lack of courage and endurance which fails to follow out what it wills.

That this should be the case need not arouse surprise. We are all sufficiently aware that systematic thinking, clearly conscious of its aim, is a somewhat infrequent phenomenon, and that in myriad ways intellectual confusion renders possible the co-existence of inconsistent doctrines in the same mind. But the intellectualist phrasing of our terminology renders us slow to recognize that *infirmity of purpose* is a no less rampant affliction, that numbers of really intelligent persons are addicted to the retention of incompatible desires, and either do not know what they will, or cannot 'make up their minds' to will consistently. Indeed it is probably true to say that 'confusion of will' is a better description of a very common psychic condition than 'confusion of thought', and that most of what passes for the latter is more properly ascribed to the former. For all such volitional indecision, whereof a desire both to eat one's cake and to have it is by no means the least venial form, masks itself in intellectual vestments, and so contributes to cast doubt upon the faith that, with patience and proper treatment, our minds are adequate instruments to cope with the practical problems of our experience.

In illustration of this doctrine a single very common and glaring instance may, on the principle *exemplo ab uno disce omnes*, suffice. The insolubility of the 'mystery of evil' arises simply and solely out of the fact that people will neither abandon the practice of passing moral judgments on events, nor the dogmas which render all ethical valuation ultimate foolishness. As soon as they make up their distracted 'minds' (*wills*) which of the incompatible alternatives they will choose to abide by, whether they prefer to vindicate the supreme validity of moral distinctions, or the 'infinity of God' and the absolute 'unity of the universe', the mystery disappears. For Evil visibly arises from certain limitations, performs certain functions, subserves certain purposes, is connected with certain conditions, in the economy of the universe, all of which admit of being empirically determined or conjectured. All that is required, therefore, to bring the existence of Evil into accord with the postulated goodness of God is that we should

conceive (as we easily can) a deity subject to the limitations, working under the conditions, aiming at the purposes, which we believe ourselves to have discovered. Similarly, if we deny that moral attributes can fitly be applied to the deity or the universe, Evil is simply a natural fact like any other. Of course, if we refuse to do either of these things, and insist on maintaining *both* these positions, we manufacture a mystery which is as insoluble as we have made it. It is insoluble because we *will not either* live in (or with) a non-moral universe, *or* give up indulging a perverted taste that revels in infinities. Thus it is not our 'reason' which is to blame, but our 'will'. For neither reason nor revelation compels us to frustrate the belief in God's goodness by that in His infinity.

And even in cases where a modicum of genuine intellectual confusion has entered into the composition of an antinomy of the reason, it is impossible to deny the complicity, and ultimate responsibility, of the 'will'. Intellectual confusion is most frequently the product of habitual thoughtlessness, carelessness, inattention and laziness, and even where it is due to sheer stupidity,[51] the obstinacy which adheres to an antinomy after its solution has been clearly displayed is a volitional quality—of a reprehensible kind.

We may infer then that there are no theoretically insoluble problems, or at all events that we have no right to assume so, but are methodologically bound to assume the opposite.[1]

§52. But, it may be urged, how does all this, even if true, help Philosophy? Is it not just as bad, nay worse, that men should hug intellectual contradictions to their bosoms, and cherish absurdities with an affectionate devotion, than that they should believe themselves their reluctant victims?

I think not, for three reasons which I will set down.

(1) The man who realizes that he is inconsistent, deliberately and of malice prepense, can more easily be made to feel the responsibility for his mental condition than he who imagines that the very constitution of his mind brings him to his wretched pass. Moreover in most cases, the desires which attach him to one or other of the incompatible beliefs are not such as he really respects, and would easily faint from shame or wither with publicity.

(2) Confusion of will may be remedied, like confusion of thought, by attention and reconsideration. Many who have hitherto proceeded unchallenged in blissful ignorance of their motives, who have lacked a clear consciousness of what they will and why, once they had their attention called to it would set to work to clear away the confusion.

(3) There is hope from the young, even though the old generation should obstinately cling to its inveterate errors. Errors as a rule are not renounced; they die out. In this particular case the prospect is perhaps a little brighter than usual, because not all who now believe in their speculative impotence really enjoy their position. And the young are in a different

case: their natural sympathies are rather with a philosophy that makes the blood run warm than with one that congeals the natural flow of thought by the chilling vacuity of its abstractions. And they have little or no inducement to adopt the gratuitous and uncomfortable perplexities of their seniors. And besides errors clearly seen to arise from perverse attitudes of will are no longer so readily communicable as while they were disguised as theoretic dogmas. Nor should it be forgotten that intellectualism is intrinsically duller, less inspired, and more difficult to follow than voluntarism, which appeals more directly to the hopefulness, courage and enterprise which are the precious heritage of youth.

So that on the whole we need not despair of Philosophy. Nay, we may gradually hope to see substituted for the disheartening and slothful twaddle (*pace* all the distinguished person who have repeated it) about the infirmities of the human reason and its impotence to break through the adamantine barriers of an alien world, exhortations bidding us be of good cheer and go forth to seek, if we would find, urging us to act if we would know, and to learn if we would act, and assuring us that if insuperable limits exist to the developments and progression of the human spirit, many has not as yet taken pains enough to discover them, while it is the part of a cur and a craven to assume them without need.

And so we must essay to weld together thought and deed, or rather, to resist the forces that insidiously dissever them and pit the intellect against the will in meaningless abstraction. For by a philosophy that seriously strives to comprehend the whole of experience, the unity of the agent is never forgotten in the multiplicity of his pursuits, but is emphatically affirmed in the principle of postulation, which pervades all theoretic activity, generates all axioms, initiates all experiment, and sustains all effort. For ever before the eyes of him whose wisdom *dares* to postulate will float, in clearer or obscurer outline, the beatific vision of that perfect harmony of all experience which he in all his strenuous struggles is striving to attain. And instead of immolating his whole life to the enervating sophism that it is all an 'appearance' to be transcended by an unattainable 'reality', let him hold rather that there can be for him no reality but that to which he wins his way through and by means of the appearances which are its presage.

NOTES

1. It is hard to say why this inadequate illustration should continue to haunt philosophic discussion, the more so as it always missed the point. For as Lotze has so well observed the 'receptivity' of the tablet is really due to the intrinsic nature of the wax and not to an absence of positive character.

2. It is significant that most of the words which have been used to express

the conception (?) of creation are metaphors which meant originally to hew or shape. For if, as seems probable, the conception of absolute 'creation' ('out of nothing') be ultimately unthinkable, the assumed 'metaphor' will be able to supply the true conception.

3. We do not, of course, affect the fact by assuming its absolute determination, 'if only we knew all'. For this is merely a postulate, devised to keep us in good heart while calculating, and in order that we may be able to forecast the future. We *may be* able to achieve the realisation of this ideal in a cosmos absolutely determined and absolutely satisfactory, but at present it is not true that *for us practically* all things are determined.

4. In this aspect logic is related to psychology as morphology is to physiology. A 'logical necessity', therefore, always rests upon, issues from, and is discovered by, a psychological need. Dr. Bosanquet adopts the comparison, but does not work it out, in his *Logic*.

5. Cf. *Contemp. Rev.*, June 1897, p. 878.

6. Cf. James' *Will to Believe*, pp. 28, 61, 103 foll. And it is, of course, psychologically true that not only our *delusions* but also our *perceptions* depend on what we come prepared to perceive.

7. Regarded as labels perhaps, neither of these terms is quite satisfactory. But as philosophic, like political, parties are commonly named (or nicknamed) by their opponents, it would be premature to attempt fixity of nomenclature until criticism has had its say.

8. It is thus the exact converse of the account given above (§6) in which moulding activity was due to 'mind', and resistance to 'matter'.

9. There is of course ample evidence that this was actually felt to be the case. Primitive animism is (*inter alia*) an explanation of the material chaos of experience by a corresponding spiritual chaos, conceived as rather more manageable.

10. To meet the obvious criticism that most people are quite unaware that they postulate in knowing, it may be well to add that the postulating, like the 'experimenting', may proceed with little or no consciousness of its nature. Indeed this is precisely the reason why the voluntarist and postulatory character of mental life has been so little recognised, and its assertion still appears such a novelty in philosophy. The philosophers who indignantly reject it argue that they are not aware of postulating, and *ergo* there is no such thing. But this is a mere *ignoratio elenchi*, and does not prove that they are not deluded.

11. Sometimes, it is true, a principle which is assumed as useful for one purpose turns out later on to conflict with another. The scientific postulate of determinism and its relations to the ethical postulate of freedom are a good example. In such cases there is a temptation to deny the absolute universality of one or both of the conflicting principles. But the better way of obviating the conflict is to emphasise the fact that each principle is relative to the purpose for which it was assumed, and that consequently, on their respective planes and from their several points of view, both principles may be universally valid, though one or the other, or both, must eventually be subjected to reinterpretation.

12. It is a great satisfaction to me to find myself on this point in complete agreement with Dr. Hodder. (*The Adversaries of the Sceptic*, p. 14) whose merciless

castigation of the half-hearted postulatings of some modern logicians, can, to my mind, be met only by an open avowal of the fundamental part played by postulation in the constitution of all knowledge (including Dr. Hodder's scepticism).

13. I am of course painfully aware that the term *necessity* is exceedingly equivocal. At first sight it seems as though we could distinguish —

1. 'Absolute' and intrinsic necessity *sui (et optimi) juris* (Aristotle's *ἀναγκαῖον ἁπλῶς καὶ πρώτως*), of which the 'necessity' of a priori truths is commonly reputed to be an illustrious example.

2. The conditional necessity of a logical train of thought, in which the conclusion follows 'necessarily' from its premisses.

3. The necessity of the 'necessary conditions' under which all actions take place. This influence of the given material is Aristotle's *οὗ οὐκ ἄνευ*.

4. The necessity of means to ends (Aristotle's *ὧν οὐκ ἄνευ τὸ ἀγαθόν*), which renders the 'necessary' ultimately the 'needful'.

5. The psychical feeling of 'having to' or 'compulsion' (Aristotle's *ἀναγκαῖον βίᾳ*).

But in reality the last two alone of these senses are primary and descriptive of ultimate facts about our mental constitution, from which the others may be derived. The feeling of necessity (No. 5) may be evoked by a variety of circumstances, by physical constraint, by attempts to deny facts or perception, or to interrupt a train of thought which coheres, either logically, or psychologically (for all minds, or for an individual's mind). It arises wherever a volition is thwarted, and not until this occurs; hence the necessity alike of fact and of reasoning appears to be 'implicit'. The truth, however, is that factual data and logical reasonings are *not* 'necessary' in themselves; their 'necessity' is only aroused in consciousness when the will needs to affirm them against resistance in the pursuit of its ends. That '2 and 2 *must be* 4' only marks the rejection of some other result: *if* we desire to adhere to our system of arithmetical assumptions and are determined to go on counting, we cannot be called upon to add 2 and 2 in any other way. But behind the '*can't*' there always lurks a '*won't*': the mind cannot stultify itself, because it will not renounce the conceptions it needs to order its experiences. The feeling of necessity, therefore, is at bottom an emotional accompaniment of the purposive search for the means to realise our ends (sense 4). And inasmuch as the pursuit of means is unmeaning except in beings working under limitations in their choice of means, which means are themselves extracted from the resisting material (*ὕλη*), the 'necessity' of the material conditions (sense 3) comes to be bound up with and included under this (4th head).

As for 'absolute necessity' (sense 1) it is altogether a misnomer, involving a contradiction *in adjectis*: necessity is always dependence, and the factual only becomes 'necessary' by having a ground assigned to it, i.e. by sacrificing its independence and becoming hypothetical. But the hypothetical necessity of though (sense 2), into which it is thus absorbed, is itself reducible to a means: Our coherent systems of 'necessary connection' can (and will) be shown to be but means for the realisation of our purposes in thinking, and apart from these possess no necessity. No one need add 2 and 2 as 4 unless he needs to add, i.e. *wills* to add them, because he *needs* arithmetic.

14. Most recently and lucidly in Mr. Hobhouse's *Theory of Knowledge*, p. 42.

15. That this actually occurs has been shown above (§14).

16. Aristotle, *Eth. Nich.* x. 4. 11.

17. *Philosophical Conceptions and Practical Results*, p. 24.

18. *Republic*, 509 B.

19. *Critique of Pure Reason*, §3, *s.f.*

20. Kant supports an erroneous doctrine by downright psychological blunders. Thus he asserts that he can 'think' empty Space and Time, but not objects out of Space and Time. If we resolve the ambiguity of 'think', it will appear (*a*) that both the objects and the 'pure intuitions' are alike *conceivable*, and (*b*) that they are alike *unimaginable*. But Kant contrasts the unimaginableness of the objects with the conceivableness of the intuitions to make the latter seem 'prior'.

21. I do not of course maintain that either science does this at present. It is just because they are not clear as to the character and relations of their respective standpoints that they leave a sort of no man's land around their border line, for hybrids like epistemology to squat on.

22. Of course this has not wholly escaped the notice of philosophers even in former days, and so we may remind ourselves of Spinoza's *conatus in suo esse perserverare*, of Schopenhauer's Will-to-live, nay of Herbart's account of sensations as self-maintenances of the soul. At the present day, voluntarism bids fair to prevail over intellectualism, having obtained the support of men like James, Wundt, Ward, Sigwart, Stout, Paulsen, Renouvier, etc. Since this was written the recently published remains of Nietzsche (*Wille zur Macht*, iii. 1. 1901) have made it manifest that he also conceived our axioms as postulates transformed into 'truths' by their usefulness, and that I might have quoted from him some telling phrases to this effect.

To all this even Mr. Bradley's reiterated asseverations (*Mind*, N.S., No. 41, pp. 7, 9, etc.) that he "cannot accept" principles which he sees to be subversive of the dogmatic assumptions of his whole philosophy hardly seem a sufficient counterpoise.

23. Of course this doctrine does not involve a denial of the existence (though it does of the rationality) of a 'pure' or 'disinterested' love of knowledge, 'for its own sake'. All our functions are liable to perversion and so as a psychological fact, there may also occur such a perversion of the cognitive instinct; nay, history would even seem to show that it may persist and even be strengthened in the course of evolution. But then the explanation probably is that 'useless' knowledge is not nearly so useless as its votaries suppose, and that in the minds which are capable of it the love for it is connected with other mental capacities which are both useful and valuable.

24. I am not here concerned with the intra-psychological questions as to the number and nature of the psychic 'elements', as to whether special volitional or affective processes must be recognised in psychology. For the question cannot be answered until it has been settled what is to be the *purpose* of the psychological description. Like all conceptions, the meaning and validity of those psychology are relative to the use to which they are put, and in the abstract they have only potential meaning. As Dr. Stout well puts it (p. 10), one "cannot be right or wrong without reference to some interest or purpose," and before bespeaking their readers' attention for the details of their classifications, psychologists should above all make it clear *what they propose to do with them.* Now I do not doubt that it is quite

possible, and for certain purposes even convenient, to devise descriptions in purely intellectual terms, which entirely dispense with the conceptions of volition, of agency, and even of feeling. Only of course it must not be imagined that any such descriptions are final and sacrosanct. They are purely methodological, and their validity extends as far as their usefulness. And the question arises whether they can be used for a purpose like that which we have in view. If not, we are entitled to describe differently. For it cannot be too soon or too strongly emphasised that there is no intrinsic or absolute truth or falsehood about any of our assumptions, apart from the manner of their working.

25. How can one prevent one's knowledge and one's belief from affecting each other? If we think at all, either the knowledge will render impossible the practical belief, or a conviction will arise that a belief we constantly act on, which permeates our whole being and never fails us, *is true*. Personally indeed I should say that such was the origin and ratification of all truth. Conversely, a belief which is foredoomed to remain a mere belief soon ceases to be acted on, i.e. to be a belief in any real sense at all. The history of religions is full of deplorable examples.

26. Or rather of its dominant doctrine.

27. *Philosophie in Deutschland*.

28. E.g. in the introduction to the *Critique of Judgment*.

29. *Naturalism and Agnosticism*, ii. p. 133. The whole passage is admirable.

30. For its relation to Aristotelianism, cf. the art. on 'Useless Knowledge' in *Mind*, N.S., No. 42.

31. Practical postulation is the real meaning of his much misconstrued doctrine of the 'Will to believe'. It is not so much exhortation concerning what we *ought to do* in the future as analysis of what we *have done* in the past. And the critics of the doctrine have mostly ignored the essential addition to the 'will to believe', viz. '*at your risk*', which leaves ample scope for the testing of the assumed belief by experience of its practical results.

32. It seems to me clear that *psychologically* perception of likeness is ultimate, anterior to identity, and incapable of being reduced to it. The analysis of likeness into 'partial identity' is a *logical* procedure which occurs when we manipulate the psychical fact with a logical purpose and try to *conceive* the likeness. But then conception is admittedly a matter of thought, and thought rests on the principle of identity. What the tautology of the Hegelian definition ('identity is *identity* in difference') is struggling to express (or conceal?) is really the *use* of logical conception in manipulating the felt likenesses. Cf. the discussion in *Mind* between Prof. James and Mr. Bradley (N.S., Nos. 5-8).

33. If identity were ever *found*, Dr. Hodder's amusing strictures (*Adversaries of the Sceptic*, pp. 116-117) on Mr. Bradley's "identity of indiscernibles" would be fatal to every use of the principle.

34. It is conceivable, indeed, that this process actually preceded in practical urgency and therefore, in time, the recognition of individuality. But that would not impair the argument, for under some conditions the discrimination of individuals is unnecessary and all individuals are *practically the same*.

35. Or, as Lady Welby says, it is the *pressure of the answer* that puts the question.

36. *Principles of Psychology*, ii. p. 671.

37. The possible exception is biology, in which the Darwinian method puts difficulties into the way of regarding organisms as automata whose psychic life may be neglected. For if psychic activity has no causal efficacy, why was it developed in a world controlled by the law of struggle for existence?

38. The simplest and most flagrant proof of this is to be found in the fact that Kant does not distinguish between the problems of *pure* and *applied* geometry.

39. I should say 'certainly' myself, but I prefer to understate the case. Cf. *Riddles of the Sphinx*, ch. ix, §2-11.

40. The alleged geometry of *four* dimensions seems to rest on a false analogy. The three dimensions of our space constructions are empirical and depend on the original data of our space-senses, which in their turn seem to depend on the triple analysis of motions by means of the semicircular canals of the ear, and the behavior of the physical bodies to which they are adaptations.

41. Cf. *Riddles of the Sphinx*, ch. iii. §6, and ix. §11.

42. The best illustration of this perhaps is that if conceptual Time were real, or 'Time' really had the attributes postulated for it, Achilles never could catch the Tortoise. Cf. *Riddles of the Sphinx*, ch. xii. §11.

43. The outcome of orthodox philosophic criticism of the substance-concept at present seems to be that substantiality cannot be legitimately affirmed of the psychical and must be reserved for the physical. Meanwhile the substantiality of the ultimate counters of physical speculation is becoming more and more shadowy, and its assumption more and more superfluous. The situation seems to me somewhat absurd. But *que faire* so long as those concerned prefer the fog and decline to clear the atmosphere? Cf. however my art. on the *Conception of Ἐνέργεια* (*Mind*, N.S., No. 36).

44. By Teleology I do *not* mean, of course, the contemplation of parts in their relation to a whole, but what the word—until (by way of compromising with its enemies) it was attenuated to a futile shadow of itself—always meant, viz. the assertion of purposive intelligence as an agency in the world.

45. Cf. *Riddles of the Sphinx*, ch. v. §6. As Dr. Julius Schultz well says in his stimulating book, *Die Psychologie der Axiome* (p. 99 and *passim*), to think is to anthropomorphise. Intellectualists will perhaps admit this eventually—shortly before their extinction!

46. Even devil-worshippers must assume that their god is susceptible to flattery and capable of being propitiated, i.e. is *good to them*; a thorough fiend would paralyse all religious activity. As for a non-moral 'deity', it cannot be worshipped and may with impunity be ignored. Wherefore, *q.e.d.*

47. It seems probable that the result will be to show that though immortality may be (logically) a postulate it is not (psychologically) postulated, or at least not postulated with scientific intent. If so the anomalous condition of the doctrine is due to the fact that the great majority do not desire to have a future life proved, do not attempt to prove it, and thwart the few who do attempt this. Hence the state of our knowledge remains commensurate with that of our desire, and the 'postulate' remains a mere postulate without developing into a source of knowledge.

48. Which of course is itself a psychological fact.

49. For both the apriorist and the empiricist accounts add this to the catalogue

of their shortcomings. Both explain the system of actual concrete knowledge which is growing to completion in the cosmic process, by a reference to the beggarly elements out of which it has arisen, composed of the abhorrent skeleton of the a priori necessities of thought in the one case, and the crude mass of chaotic experiences in the other. But from the standpoint of the *τέλος* what knowledge has become is truer, because more valuable, than what it has become out of.

50. The thing is of course really impossible. A mere 'understanding' which excludes any aspect of the given reality is not even understanding in the end, and would only aggravate our sense of the burden of an unintelligible world. Cf. §46.

51. The moral valuation of stupidity is much too high; perhaps in consequence the prevalence of an intellectualism which, by divorcing knowledge and action, encourages people to bestow moral admiration upon what is intellectually contemptible. Stupidity is commonly supposed to have an intrinsic affinity with virtue, or at least to be a quality of which no man or woman need be morally ashamed. In reality, however, it may be questioned whether it is ever found without moral guilt, either in its possessors or in their social medium. Hence, as well as for the purpose of evincing the sincerity of their rejection of intellectualism, it would be well if philosophers devoted some of their surplus ingenuity to inverting their ancient paradox that 'vice is ignorance' and expounding in its stead the profounder and more salutary dictum that 'ignorance is vice'.

52. I am already inclined to deny that, despite the utmost efforts of skeptics, theologians, and Mr. Bradley, there exist any theoretical antinomies which can be pronounced insoluble in principle—unless indeed the 'eternal cussedness' of man be esteemed such.

28

TRUTH

Of all philosophic questions that of Truth is perhaps the most hackneyed and unanswerable, when treated in the usual fashion.[1] Now the usual fashion is to indulge either in ecstatic rhapsodies about the sacredness of Truth or in satirical derision of pretensions to have actually attained it. Both these procedures are assured beforehand of popular applause, but both render the question—*What is Truth?* one thoroughly rhetorical, and so perhaps the one is the proper answer to the other, and 'jesting Pilate' has a right to smile at the enthusiast. Nor have the philosophers done much to improve the situation. Ever since one of Plato's 'noblest lies' proclaimed the doctrine that philosophers are lovers of truth, they have been quite willing to believe this, and have often found a people willing to be deceived politely willing to admit it. But perhaps because their passion, even when most genuine, was too distantly 'platonic', this philosophic love of truth has hardly influenced perceptibly the course of things, and it might remain in doubt whether the Pragmatist philosopher also would care and dare to obtain some more substantial token of Truth's favours, were it not that the cheapest condemnation of his new attempt is to accuse him of a malicious joy in the destruction of Truth's very

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Humanism: Philosophical Essays (London and New York: Macmillan, 1903), pp. 44–61.

notion. It becomes incumbent on him therefore to defend himself against such slanders, and to make clear how exactly he proposes to approach, and in what sense to derive, the notion of Truth.

I intend, therefore, in this essay to examine—I. the chief current definitions of Truth, which lay claim to logical validity, and to show that they are neither tenable, nor even intelligible, without reference to its psychological character; II. to describe that psychological character; and III. to explain how Pragmatism extends and alters the traditional conceptions on the subject.

I

Under the head of unpsychological, logical, or 'metaphysical' definitions may be instanced (1) the well-known dictum that truth consists in an 'agreement' or 'correspondence' of thought with its object, viz. reality. This however speedily leads to a hopeless *impasse*, once the question is raised—How are we to *know* whether or not our 'truth' 'corresponds' or 'agrees' with its real object? For to decide this question must we not be able to compare 'thought' and 'reality' and to contemplate each apart form the other? This however seems impossible. 'Thought' and 'Reality' cannot be got apart, and consequently the doctrine of their 'correspondence' has in the end no meaning. We are not aware of any reality except by its representation in our 'thought', and *per contra*, the whole meaning of 'thought' resides ultimately in its reference to 'reality'. Again, even if it were assumed that somehow the independent reality mirrored itself in our thought, how should we discover whether or not his image was 'true', i.e. agreed with the inaccessible reality it claimed to represent? This whole theory of truth therefore would seem futile. Having started from the radically untrue and unworkable assumption that 'truth' and 'fact', 'thought' and 'reality' are two things which have to be brought into relation, it is inevitably driven to the admission that no such relation can validly be established.

(2) A second logical definition looks at first more promising. It conceives truth as essentially systematic coherence, the 'true' being that which 'fits' into a 'system', the false that which is discrepant with it. This has the immense advantage of not creating the chasm between 'truth' and 'reality' in which the former definition was engulfed. Both these conceptions remain immanent in the process of knowledge, which is the construction of a system of 'reality' known to be 'true' by the coherence of its parts.

Now this account undoubtedly brings out important features in the nature of Truth, but as it stands, it is so incomplete and misleading that we can hardly follow the fashionable logic of the day in accepting it as all we can reasonably want to know about truth. In fact, when we discount the air

of mystery, the obscure phraseology and the pompous magniloquence with which this doctrine is propounded, we shall find that all it comes to is that consistency is a mark of truth, and that when we find that we can maintain our conceptual interpretations of our experiences we come to treat them as realities. But to take the pronouncement that *truth is what fits in a system* as therefore final would be ludicrously rash, and to detect the limitations of the formula, it suffices to consider what may be said in favour of a string of counter-propositions, such as, e.g. (1) that not all 'systems' are true, (2) that no 'system' is true, (3) that *many* systems are true, and (4) that even if all truth be systematic, it is not thereby adequately defined.

(1) To define truth as systematic is at once to raise the question of systematic falsehood. For there can be no doubt that false assumptions also tend to complete themselves in a system of inferences, to cohere together, to assimilate fresh facts, and to interpret them into conformity with themselves; in short, to assume all the logical features that are claimed for 'truth'. Does it not follow, therefore, that something more than systematic coherence is needed to determine truth? As, therefore, *not all systems are true*, must we not suggest a further criterion to distinguish true from false?

The reply to this objection would have to take the form largely of an acceptance thereof. It would have to be admitted that in proportion as a falsehood or a lie became more systematic, its prospects of being accepted as true grew greater, that coherent lies did often win acceptance, and that a perfectly coherent lie (or error) would be tantamount to absolute truth. Lies can be called false only when they have been found out, and they are found out just because sooner or later they do not fit into our system of 'truth'. These systematic falsehoods are never quite systematic enough, and so the mimicry of truth by false systems, so far from subverting, rather confirms the doctrine that truth is systematic.

(2) This defence prepares the way for a new assault. It would be adequate if we really had an indefeasible system of absolute truth by whose aid we might detect the inconsistencies of the pseudo-systems. But where shall we find such truth? The bodies of 'truth' which *de facto* we acknowledge in our sciences are all partial systems, incomplete in themselves and discrepant with each other. If nothing short of absolute truth is perfectly systematic, and if all our systems are imperfect, is not all our 'truth' tainted with falsehood, and must it not be admitted that *no* (actual) *'systems' are 'true'*? To talk of the mimicry of true by false statements is misleading; we should remember that, in addition to the protective mimicry of Bates, there exists another form ('Müllerian') in which the mimics co-operate to advertise the undesirable character they have in common. And so our systems may all be mimicking each other and may *all* be false.

Again, I think, the contention must in substance be admitted. The

actual systems of our science are continually being convicted of error, and cannot seriously sustain their claim to the deference due only to the perfect system. Still, in extenuation one might urge (*a*) that ignorance is not necessarily error, nor incompleteness falsehood; (*b*) that experience would seem to show that even when coherent systems of interpretation have to be recast, what occurs is a transformation rather than a revolution, reinterpreting rather than destroying that 'truths' of the older order. Though, therefore, our 'systems' may not be wholly 'true', we may conceive them as progressively approximating to the truth. And we (*c*) we must conceive them as in the end converging in one absolute and all-embracing system which alone would be indubitably and strictly 'true'.

(3) This last defence, however, still contains a hazardous assumption. Is the ideal of a complete system absolutely true really the straightforward, umambiguous notion which it seems? Are we entitled to argue from the unity of a concept to a similar unity of the concrete ways of exemplifying that concept, and so to assume that there is *one* system *and no more*, into which all truth must finally be fitted? The assumption is a seductive one, and underlies all monistic argument. But still it is an assumption, and begs some very puzzling questions. It assumes the absolute determination of the universe, and it is only on this assumption that the inference is cogent, that 'truth' and 'reality' can only be completely construed in one single way. If we doubt, or deny, or demand proof, of this assumption, it may well be that *many* alternative systems may be 'true', and that 'reality' can be constructed in various ways by our varying efforts. The poet may have exaggerated in suggesting

> There are nine-and-sixty ways
> Of composing tribal lays,
> And every single one of them is right;

but still the more sincerely and completely we recognize the presence of human activity in the construction of 'truth' and 'reality' the more clearly is their contingence suggested and the less plausible does it seem that all these apparently arbitrary procedures are foredoomed to issue in the unveiling of one single, inevitable, and pre-existing 'system'. And if we doubt the legitimacy of this assumption, it follows at once that we cannot decide the measure of truth possessed by our actual bodies of knowledge by the mere test of systematic coherence. System A may need reinterpretation into A′ to fit in with system B in the final system X; but we might as well or better reinterpret B into B′, so that it would fit with A into the final system Y. In such a case are we to consider A + B′ or A′ + B as ultimately true?

In short, our logic as well as our metaphysic will have to concern itself more scrupulously and less perfunctorily with pluralistic possibilities.

(4) The last objection has brought out the fact that in assuming truth to be univocally determined by the conception of a 'system', we went too far, and uncritically settled an important issue; we have now to face a criticism urging that the conception of a system in another direction does not go far enough to determine the nature of 'truth'. To win from us recognition as 'truth', it is not enough to have a number of coherent judgments connected in a system. The 'system' to be true must also have *value* in our eyes; the demand for 'system' is but part of a larger demand for a 'harmony' (actual or at least ideal) in our experience; it is not merely a matter of formal logical consistency, but also of emotional satisfaction. Hence no system is judged intellectually 'true' unless it is also a good deal more than this, and embraces and satisfies other than the abstractly intellectual aspects of experience. Thus no completely pessimistic system is ever judged completely 'true'; because it leaves unremoved and unresolved a sense of final discord in existence, it must ever stimulate anew to fresh efforts to overcome the discrepancy.[2] And conversely, it is by no means rare that what impresses us as conducive to harmony should be declared 'true' with little or no inquiry into its systematic coherence; indeed, it is probably such perception of their aesthetic self-evidence that accounts for the adoption of the 'axiomatic' postulates that form first principles for knowledge.[3]

Thus the notion of 'system' proves doubly insufficient to define 'truth'. There is 'system' which is not valued as 'true', and there is 'truth' which is so valuable that it need not be 'system'. We need 'system' only as a means to the higher notion of 'harmony',[4] and where we can get the latter without the former, we can readily dispense with it.

The bulk, however, of logicians would in all probability strenuously object to this last argument. They would protest against the contamination of the question of 'truth' with questions of 'harmony' and 'valuation'. To refer to these is to overpass the bounds of logic, it is to trespass on the lower ground of psychology in which thought soon gets bogged in the reedy marshes of psychical fact. No good can come of such an intermixture of psychology with logic; our criterion of truth must be logical, our thought 'pure'. To talk of desire, interest, and feeling in a logical context is sheer madness, and to require logical theory to take account of their existence is to require it to adjust itself to the alogical.

If the defense of logical convention is imprudent enough to take this ground, it can meet with nothing but disaster. For we shall at once have to defy the logician (1) to produce his 'pure' thought; (2) to account for the *movement* of thought by anything but an appeal to psychological motives, desire, feeling, interest, attention, well, etc.; (3) even to describe what he

conceives to happen in strictly logical terms and without constant recourse to psychology.

The first two of these points will probably be conceded by all except belated Hegelians, but the third may need some illustration, the more so as we may draw from it also an independent (fifth) reason for denying the adequacy of the conception of truth as a system. I may point out therefore (5) that the ultimate terms of this (as of every other) definition of Truth are primarily psychological. If we take it that a 'system' means a body of coherent judgments, it needs but little reflection to see that the logical evaluation of the 'system' presupposes its psychical existence, and the previous discussion of a number of psychological questions. (1) How, e.g. is the system recognised? (2) What is the nature, and (3) the cause of its 'coherence'?

As to (1) it must surely be admitted that the logical system to be a system for us must be apprehended as such by us. Before, that is, an alleged 'truth' can be subjected to logical reflection, it has to be actually judged 'true'; its truth has to be *felt* before it is *understood*. Even, therefore, if logic could find and reserve for itself among our conscious processes such a thing as a process of 'pure' thought, a distinct mental act would yet be necessary for its apprehension, and this act would be psychological. In other words, any actually occurring truth is, in the first place, a psychic process, and as such is conditioned by a variety of psychological influences of the kind just mentioned.

The attempt, therefore, to represent 'thought' and a fortiori 'truth', as wholly an affair of mediation fails; at every step in its progress the mediate inference has to be immediately recognised, and the mediate 'knowledge-about' rests upon and returns into an immediate 'acquaintance-with'.[5] If, therefore, we call them respectively 'thought' and 'feeling', we shall have to say that an 'element' of 'feeling' is bound up with and accompanies every act of 'thought', and that no actual thought either is or can be conceived as 'pure'.

Now if such be the state of the case, why on earth, should it not be recognised in logic? Logic, I presume, in the very act of constituting norms for thought, presupposes the facts of thought, and if all actual thinking, good, bad, or indifferent, is impelled by interest, then interest ipso facto must become a factor in the logical analysis of thought. Why, then, should we insist on tortuous and complicated misdescriptions in terms of 'pure thought' of processes which are quite simple when we consent to regard their full psychic nature?[6]

(2) *Mutatis mutandis*, what has been said of the logical system applies also to its 'coherence'. The coherence of judgments is a psychical fact which justifies, nay demands, psychological treatment. We find accordingly that it is (*a*) a matter of immediate apprehension. However we refine upon the logical concept of coherence, we can do nothing without observing that *de*

facto judgments stick together. (*b*) We observe also certain coherence 'feelings', whose strength is best measured by that of the feeling of (logical) necessity[7] which supervenes when we try to part the 'coherent' judgments. Truths 'cohere' when they afford us the peculiar satisfaction of feeling that they 'belong together', and that it is 'impossible' to separate them.[8]

And (*c*) if the cohesion of our thoughts, the belonging together, e.g. of A—B, were not immediately felt, but had to be established by mediate reasoning, it would follow that for any two truths to cohere a reason would have to be alleged why they should do so. But this would have to be another truth, and the attempt to 'understand' the immediate psychical cohesion would have to be renewed upon this, until it became obvious that an infinite process was implicit in the simplest inference.[9] Is it not much more reasonable to suppose that the cohesiveness is a psychical feature of the thinking itself? Finally (*d*) it would seem that not every sort of coherence in thought was regarded as logically important. The sort of coherences, e.g. which proceed from associations and lead to puns and plays upon words are relegated to that undignified limbo in which fallacies are huddled together. But if not all coherence is logical, then the logician plainly needs a preliminary psychology to distinguish for him the kind of coherence which is his concern.

(3) If logic is to make the attempt to exclude psychology, the real cause of logical coherence must be pronounced to be extralogical. For it is nothing that can plausibly be represented[10] as inherent in the nature of thought *qua* that, i.e. of thought as logicians abstractly conceive it. The cause of logical coherence may be summed up in the one word *interest*, and 'thought' which is not set in motion by interest does not issue in thinking at all. If, therefore, interest is to be tabooed, the whole theory of thought becomes a mere mass of useless machinery. For it is interest which starts, propels, sustains, and guides the 'movement' of our thought. It effects the necessary *selection* among the objects of our attention, accepting what is consonant, and rejecting what is discrepant, with our aim in thinking. If, then, the *purposiveness* of our thought is its central feature psychologically, how can a logic set it aside without the grossest travesty? How fundamental is the fact of purposive interest in mental life is apparent from the cases where the normal control of consciousness is weakened or suspended. In sleepiness, reverie, dream, delirium, madness, etc., the purposive guidance of our thought grows lax—with the result that anarchy speedily overtakes the soul. Thoughts 'cross' the mind in the most 'illogical' way, and though our mental images may still continue to carry meaning, they have ceased to mean anything coherent, and *pro tanto* logical thinking ceases to exist.

Thus in trying to understand the doctrine that truth is system we have been driven to the conclusion that in psychology, if anywhere, the clue to

the mystery of truth must lie. For not only the definitions we have examined, but all others of the sort, must presuppose a psychological treatment of the psychical facts.[11]

II

Let us turn therefore to psychology. And to begin with let us formulate our psychological questions more precisely, as (1) *what is the psychical nature of the 'recognition' of 'truth'?* and (2) *to what part of our experience is this recognition attached?*

To the first question the summary answer would appear to be that *Truth is a form of Value*, and for this reason related to, and largely interchangeable with, our other modes of valuation. Now such valuation of our experience is a natural, and in the normal consciousness an almost uninterrupted, process. We are for ever judging things as 'true' and 'false', 'good' and 'bad', 'beautiful' and 'ugly', 'pleasant' and 'unpleasant'. So continuous is this habit that existence without 'appreciation', 'fact' without 'value', is rather a figment of abstraction than a psychical experience. Now it is the *de facto* existence of this habit of valuation that gives rise to the normative sciences, and the function of logic as a normative science is to regulate and systematise our valuations of 'true' and 'false'. For of course these logical valuations also will need normative treatment. At first they are bestowed by individuals pretty much at random. Anything may commend itself to anybody, as 'true', nay, even as *the* truth,[12] and there are no guarantees that any man's valuations will be consistent with any other man's valuations will be consistent with any other man's, or even with his own at other times. It is only as the needs of social intercourse and of consistent living grow more urgent that *de facto* 'truth' grows systematic and 'objective', i.e. that there comes to be truths which are 'the same for all'. And finally, when most of the hard work has actually been done, the logician arises and 'reflects' on the genesis of 'truth', which, in the end, he mostly misrepresents.

It is fairly plain, therefore, that the psychical fact of the existence of truth-valuation must be the starting-point of the psychological account of truth. Whether it should be called the foundation of the whole structure, or whether it should not be likened to the intrinsic nature of the bricks of which the structure is built up, seems to be a matter of the choice of metaphors. It is clear at any rate that without this valuation there would be no 'truth' at all.

Of course, however, further psychological questions may be raised about it. We may ask, for instance, whether the fact that we judge things true and false is psychologically simple and ultimate, or whether we could not analyse out a common element of value from our various valuations. The

answer to such questions might grow long and somewhat intricate, but we are hardly bound to go into them very deeply. It will suffice to point out that the 'simple' in psychology can only mean *what it is no use to analyse further.*[13] In other words, the distinction of 'simple' and 'complex' is always relative to the purpose of the inquiry. The 'elements' out of which the 'complex' states of mind are put together do not exist as psychic facts. In the actual experiencing, most states of consciousness form peculiar and recognisable wholes of experience, which feel 'simple'. Thus the taste of lemonade is emphatically *not* the taste of sugar plus the taste of lemon; though of course it is by squeezing the lemon and dissolving the sugar that we compose the lemonade and procure ourselves the taste. The experiences which really are 'complex' to feeling are comparatively rare, as e.g. when we feel the struggle of incompatible desires. On the other hand, when we reflect upon our experience, it is easy enough to represent it all as 'complex', and to break it up into factors, which, we say, were present unobserved in the experience. But the justification of this procedure is that it enables us *to control the original experience*, and the factors which the 'analysis' arrives at are whatever aids this purpose. It is in no wise incumbant on us to go on making distinctions for their own sake and from inconsistent points of view, without aim and without end. Indeed the practice, though it seems to form the chief delight of some philosophers, must be pronounced to be as such trivial, irrelevant, and invalid. We have a right therefore to declare 'simple' and ultimate what it is useless to treat as 'complex' for the purpose in hand, and in this instance we shall do well to avail ourselves of this right. For an analysis of the valuation 'true' and 'false', whether or not it is possible for other purposes, would hardly be germane to logic.

III

We are however still sufficiently remote from what is ordinarily meant by 'truth'. For truth is conceived as something 'objective' and 'coherent', while the truth-valuations we have recognised are subjective and so far seem chaotic. We may have found indeed the bricks out of which the temple of Truth is to be built, but as yet we have but a heap of bricks and nothing like a temple. Before, moreover, we can venture to erect the actual structure of objective Truth we must consider (*a*) the nature of the ground over which the truth-valuation is used, (*b*) the way in which our bricks cohere, i.e. the 'formal' nature of truth.

As to (*a*) the use of 'truth' lies in the valuation of 'fact'. The objects of our contemplation when valued as 'true' become 'facts', and 'facts' (or what we take to be such) become available for knowledge when valued as

'true'. The system of truth therefore is constructed by an interpretation of 'fact'. But this interpretation conforms to certain building laws, as it were. It consists in the use of concepts, and rests on the fundamental principles of thought. Hence (*b*) these result in a certain formal character of truth. Whatever is harmonious ('consistent') with the fundamental assumptions of our conceptual interpretation of reality is in one sense 'true'. But it is truth in a narrower sense than that required for 'material' truth.[14] In its fullest sense our truth must harmonise not only with its own ways of thinking but with our whole experience, and it might well be that the merely formal truth of consistence proved unable to attain results of value for our wider purpose, and so was not fully 'true'. In point of fact it is useful, though not adequate; to show that a 'truth' follows formally is not enough to prove it *de facto* true; to show that it involves a formal flaw is enough to invalidate it. For we would rather renounce our conclusion than the use of formal principles.

After premising which we may return to our problem of constructing an objective truth out of subjective truth-valuations, of, as we saw, the most varied nature. Every one of there subjective valuations is the product of a psychological interest, and aims at the satisfaction of such an interest. But even in the individual there is a good deal of regulation of his subjective valuations; there is a tendency to the consolidation and subordination of interests under the main purposes of his life. Hence many of his initial interests will be suppressed, and the valuations which ministered to them will tend to be withdrawn, to be judge *useless* and, ultimately, *false.* In other words, there begins to operate among our subjective truth-valuations *the great Pragmatist principle of selection*, viz. that the 'useless' is not to be valued as 'true'. The 'use' appealed to and the 'truth' extracted by this criterion are, it is true, only individual. But not even of the individual is it true to say that his *feeling* a thing 'true' and *calling* it so *makes* it so. The question of the *sustaining* of the valuation after it is made is a distinct one, and that perhaps to which we mostly want an answer when we inquire: What is truth?

This question becomes more intricate, but also more interesting, when we take into account the social environment. For man is a social being, and truth indubitably is to a large extent a social product. For even though every truth may start in a minority of one, its hold upon existence is exceedingly precarious, unless it can contrive to get itself more extensively appreciated. Those unfortunate enough to have acquired and retained an exclusive view of truth are usually secluded in prisons or asylums, unless their 'truth' is so harmlessly abstruse as not to lead to action, when they are sometimes allowed to be philosophers! Truth, then, to be really safe, has to be more than an individual valuation; it has to win social recognition, to transform itself into a common property.

But how? It is by answering this question that Pragmatism claims to have made a real advance in our comprehension of truth. It contends that once more, only more signally and clearly than in the individual's case, it is the usefulness and efficiency of the propositions for which 'truth' is claimed that determines their social recognition. The use-criterion selects the individual truth-valuations, and constitutes thereby the objective truth which obtains social recognition. Hence in the fullest sense of Truth its definition must be pragmatist. Truth is the useful, efficient, workable, to which our practical experience tends to restrict our truth-valuations; if anything the reverse of this professes to be true, it is (sooner or later) detected and rejected.

As an account of Truth this is not so much a speculative theory as a description of plain fact. Whenever we observe a struggle between two rival theories of events we find that it is ultimately the greater conduciveness of the victor to our use and convenience that determines our preference and its consequent acceptance as true. Illustrations of this fact might be multiplied without limit. It will suffice however to allude to the well-known fact that what decided the rejection of the Ptolemaic epicycles in favour of the Copernican astronomy was not any sheer failure to represent celestial motions, but the growing cumbrousness of the assumptions and the growing difficulty of the calculations which its 'truth' involved. Similarly when I affirm (as I have now been doing for a good dozen years) that the metaphysical theory of the Absolute is *false*, I only mean that it is *useless*, that it simplifies nothing and complicates everything, and that its supposed advantages are one and all illusory. And I hope that as the pragmatist way of looking at things grows to be more familiar, more of my philosophic *confrères* will allow themselves to perceive these simple facts.

Of course there still remain complications of detail about the doctrine that social usefulness is an ultimate determinant of 'truth'. It is obvious, for example, that delicate questions may arise out of the fact that not only does what works receive social recognition, but also that what receives social recognition for this very reason largely works. Again, there may be old-established mental industries which have outlived their usefulness, but have not yet been condemned as false. Other truths again are intrinsically of so individual a character that society accepts, e.g. Smith's statement that he has a headache, or that he dreamt a dream, on his *ipse dixit*. And while new truths are struggling for recognition, it may come about that much that is useful is thought to be useless and *vice versa*, and that the discrepancy between truth as it is supposed, and as it turns out, to be, grows great. Then, again, few societies are so severely organized with a sole view to efficiency as to not tolerate a considerable number of useless persons pursuing 'useless' knowledge, or useful knowledge in a useless way. Of course there is a certain amount of social pressure brought to bear upon such persons, but

it is not enough of produce complete social agreement, and the elimination of all discrepant truth. Indeed, the toleration of socially useless, and even pernicious 'truths', which are individually entertained, seems on the whole to be increasing. This only shows that we can afford the luxury. In earlier times the thinkers of divergent views had short shrift granted them, and so as the result of much past brutality we now enjoy considerable bodies of 'objective' truth. And considering how much use philosopher have always made of this indulgence to differ from their fellows, it would be gracious if they at least gave honour where honour was due, and appreciated the labours of their ancestors, instead of attributing the whole credit of the conformity which exists to the initial constitution of the Absolute. Or if they insist on it, they might at least, in common fairness, attempt to tell us to whom t

he *discredit* should attach for the discrepancy and nonconformity, which exist no less and are by far more troublesome, even if they are too indolent to help in the practical work of science, which enlarges the limits of practical agreement and constitutes objective truth.

To sum up; the answer to the question—*What is Truth?*—to which our Pragmatism has conducted us, is this. As regards the psychical fact of the truth-valuation, Truth may be called an ultimate function of our intellectual activity. As regards the objects valued as 'true', Truth is that manipulation of them which turns out upon trial to be useful, primarily for any human end, but ultimately for that perfect harmony of our whole life which forms out final aspiration.

NOTES

1. This paper was written for this volume in order to complete, with *Axioms as Postulates* and the two essays which precede it, the outline of a pragmatist theory of knowledge. It will, I hope, be observed that although these four papers do not of course claim to be exhaustive, they supplement one another.

2. Cp. p. 200.

3. Cp. *Personal Idealism*, p. 123.

4. Cp. p. 189.

5. James, *Princ. of Psych.* i. p. 221.

6. All the squabbles about the 'activity' or 'movement' of thought are due to perversities of this sort. Abstract thought is not active, or even alive; it does not exist. What is active is the thinking being with a certain psychical idiosyncrasy in consequence whereof he pursues his ends by various means, among which thinking is one. The nature of his thought everywhere refers to the purpose of his thinking.

7. See *Personal Idealism*, p. 70, note.

8. It is never strictly impossible to reject a 'truth', only in some cases the cost is

excessive. To accept, e.g. a formal contradiction, stultifies the assumption of all thinking, and should consequently debar us from the further use of thinking. This is too much, and we usually prefer to reconsider the thought that has ended in a contradiction. Moreover, if we desire to entertain contradictory beliefs, there is a much easier way; we have merely to refuse to think them together. This indeed is what the great majority of men have always done.

9. For an amusing illustration of this existence of an immediate apprehension in all mediate cogency see Lewis Carroll's dialogue between Achilles and the Tortoise in *Mind*, N.S. No. 14, p. 278.

10. I am willing to suppose it just possible to translate all the features of our thinking into a completely and consistently intellectualist phraseology. Philosophers have made endless attempts to do so, but none have succeeded, though it is I suppose a merit of Hegel's to have tried more elaborately, and to have failed more obscurely, than the rest. But the philosophers' insistence on reducing everything to pure thought is merely one of their professional prejudices.

11. The definition, e.g. that *truth is what we are forced to believe*, obviously implies psychological presuppositions as to the nature of 'belief' and 'necessity'.

12. Cp. the inexhaustible variety of the 'systems' of religion and philosophy.

13. I owe this definition to Prof. A. W. Moore's excellent account of the functional theory of knowledge in Locke in the *Chicago University Contributions to Philosophy*, vol. iii. p. 23.

14. Cp. p. 98 note.

29

THE AMBIGUITY OF TRUTH

The purpose of this essay is to bring to a clear issue, and so possibly to the prospect of a settlement, the conflict of opinion now raging in the philosophic world as to the nature of the conception of 'truth'. This issue is an essential part of the greater conflict between the old intellectualist and the new 'pragmatist' school of thought, which extends over the whole field of philosophy. For, in consequence of the difference between the aims and methods of the two schools, there is probably no intellectualist treatment of any problem which does not need, and will not bear, restatement in voluntarist terms. But the clash of these two great antithetical attitudes towards life is certainly more dramatic at some points than at others. The influence of belief upon thought, its value and function in knowledge, the relation of 'theory' to 'practice', the possibility of abstracting from emotional interest, and of ignoring in 'logic' the psychological conditions of all judgment, the connexion between knowing and being, 'truth' and 'fact', 'origin' and 'validity', the question of how and how far the real which is said to be 'discovered' is really 'made', the 'plasticity' and determinable indetermination of reality, the contribution of voluntary acceptance to the

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Studies in Humanism, 2nd edn. (London and New York: Macmillan, 1912), pp. 141–162.

constitution of 'fact', the nature of purpose and of 'mechanism', the value of teleology, the all-controlling presence of value-judgments and the interrelations of their various forms, the proper meaning of 'reason', 'faith', 'thought', 'will', 'freedom', 'necessity', all these are critical points at which burning questions have arisen or may arise, and at all of them the new philosophy seems able to provide a distinctive and consistent treatment. Thus there is throughout the field every promise of interesting discoveries and of a successful campaign for a thoroughgoing voluntarism that unsparingly impugns the intellectualist tradition.

But the aim of the present essay must be restricted. It will be confined to one small corner of the battlefield, viz. to the single question of the making of 'truth' and the meaning of a term which is more often mouthed in a passion of unreasoning loyalty than subjected to calm and logical analysis. I propose to show, (1) that such analysis is necessary and possible; (2) that it results in a problem which the current intellectualist logic can neither dismiss nor solve; (3) that to discard the abstractions of this formal logic at once renders this problem simple and soluble; (4) that to solve it is to establish the pragmatist criterion of truth; (5) that the resulting definition of truth unifies experience and rationalizes a well-established classification of the sciences; and (6) I shall conclude with a twofold challenge to intellectualist logicians, failure to meet which will, I think, bring out with all desirable clearness that their system at present is as devoid of intellectual completeness as it is of practical fecundity.

This design, it will be seen, deliberately rules out the references to questions of belief, desire, and will, and their ineradicable influence upon cognition, with which Voluntarism has made so much effective play, and this although I am keenly conscious both that their presence as psychical facts in all knowing is hardly open to denial,[1] and that their recognition is essential to the full appreciation of our case. But I am desirous of meeting our adversaries on their own ground, that of abstract logic, and of giving them every advantage of position. And so, even at the risk of reducing the real interest of my subject, I will discuss it on the ground of as 'pure', i.e. as formal, a logic as is compatible with the continuance of actual thinking.

I

Let us begin then with the problem of analysing the conception of 'truth', and, to clear up our ideas, let us first observe the extension of the term. We may safely lay it down that the use of truth is *ἴδιον ἀνθρώπῳ*, a habit peculiar to man. Animals, that is, do not attain to or use the conception. They do not effect discriminations within their experience by means of the pred-

icates 'true' and 'false'. Again, even the philosophers who have been most prodigal of dogmas concerning the nature of an 'infinite' intelligence (whatever that may mean!), have evinced much hesitation about attributing to it the discursive procedures of our own, and have usually hinted that it would transcend the predication of truth and falsehood. As being then a specific peculiarity of the human mind, the conception of 'truth' seems closely analogous to that of 'good' and of 'beautiful', which seem as naturally to possess antithetical predicates in the 'bad' and the 'ugly', as the 'true' does in the 'false'. And it may be anticipated that when our psychology has quite outgrown the materialistic prejudices of its adolescence, it will probably regard all these habits of judging experiences as just as distinctive and ultimate features of mental process as are the ultimate facts of our perception. In a sense, therefore, the predications of 'good' and 'bad', 'true' and 'false', etc., may take rank with the experiences of 'sweet', 'red', 'loud', 'hard', etc., as ultimate facts which need be analysed no further.[2]

We may next infer that by *a truth* we mean a proposition to which this attribute 'true' has somehow been attached, and which, consequently, is envisaged *sub specie veri*. *The Truth*, therefore, is the totality of things to which this mode of treatment is applied or applicable, whether or not this extends over the whole of our experience.

If now all propositions which involve this predication of truth really deserved it, if all that professes and seems to be 'true' were really true, no difficulty would arise. Things would be 'true' or 'false' as simply and unambiguously as they are 'sweet' or 'sour', 'red' or 'blue', and nothing could disturb our judgments or convict them of illusion. But in the sphere of knowledge such, notoriously, is not the case. Our anticipations are often falsified, our claims prove frequently untenable. Our truths may turn out to be false, our goods to be bad: falsehood and error are as rampant as evil in the world of our experience.

This fact compels us (1) to an enlargement, and (2) to a distinction, in the realm of truth. For the logician 'truth' becomes a problem, enlarged so as to include 'falsity' as well, and so, strictly, our problem is the contemplation of experience *sub specie veri et falsi*. Secondly, if not all that claims truth is true, must we not distinguish this initial claim from whatever procedure subsequently justifies or validates it? *Truth, therefore, will become ambiguous*. It will mean primarily a claim which may or may not turn out to be valid. It will mean, secondarily, such a claim *after* it has been tested and ratified, by processes which it behoves us to examine. In the first sense, as a claim, it will always have to be regarded with suspicion. For we shall not know whether it is really and fully true, and we shall tend to reserve this honourable predicate for what has victoriously sustained its claim. And once

we realize that *a claim to truth is involved in every assertion as such*, our vigilance will be sharpened. A claim to truth, being inherent in assertion as such, will come to seem a formal and trivial thing, worth noting once for all, but possessing little real interest for knowledge. A formal logic, therefore, which restricts itself to the registration of such formal claims, we shall regard as solemn trifling; but it will seem a matter of vital importance and of agonized inquiry what it is that validates such claims and makes them really true. And with regard to any 'truth' that has been asserted, our first demand will be to know what is *de facto* its condition, whether what it sets forth has been fully validated, or whether it is still a mere, and possibly a random, claim. For this evidently will make all the difference to its meaning and logical value. That '2 + 2 = 4' and that 'truth is indefinable' stand, e.g. logically on a very different footing: the one is part of a tried and tested system of arithmetical truth, the other the desperate refuge of a bankrupt or indolent theory.

Under such conditions far-reaching confusions could be avoided only by the unobtrusive operation of a beneficent providence. But that such miraculous intervention should guard logicians against the consequences of their negligence was hardly to be hoped for. Accordingly we find a whole cloud of witnesses to this confusion, from Plato, the great originator of the intellectualistic interpretation of life, down to the latest 'critics' of Pragmatism with all their pathetic inability to do more than reiterate the confusions of the *Theaetetus*. For example, this is how Plato conducts his refutation of Protagoras in a critical stage of his polemic:[3]

"*Socrates*. And how about Protagoras himself? If neither he nor the multitude thought, as indeed they do not think, that man is the measure of all things, must it not follow that the truth (*validity*) of which Protagoras wrote would be true (*claim*) to no one? But if you suppose that he himself thought this, and that the multitude does not agree with him, you must begin by allowing that in whatever proportion the many are more than one, his truth (*validity*) is more untrue (*claim*) than true?" (not necessarily, for all truths start their career in a minority of one, as an individual's claims, and obtain recognition only after a long struggle).

"*Theodorus*. That would follow if the truth (*validity*) is supposed to vary with individual opinion.

"*Socrates*. And the best of the joke is that he acknowledges the truth (*as claim*, Protagoras; *as validity*, Plato) of their opinion who believe his own opinion to be false; for he admits that the opinions of all men are true" (*as claims*; cp. also p. 309).

For a more compact expression of the same ambiguity we may have recourse to Mr. Bradley. "About the *truth* of this Law" (of Contradiction) "so far as it applies, there is in my opinion no question. The question will

be rather as to how far the Law applies and how far *therefore* it is *true*."[4] The first proposition is either a truism or false. It is a truism if 'truth' is taken in the sense of 'claim'; for it then only states that a claim is good if the question of its application is waived. In any other sense of 'truth' it is false (or rather self-contradictory), since it admits that there *is* a question about the application of the 'Law', and it is not until the application is attempted that validity can be tested. In the second proposition it is implied that 'truth' depends, not on the mere claim, but on the possibility of application.

Or, again, let us note how Prof. A. E. Taylor betters his master's instruction in an interesting article on 'Truth and Practice' in the *Phil. Rev.*, for May 1905. He first lays it down that "true propositions are those which have an unconditional *claim* on our recognition" (of their *validity*, or merely of their *claim*?), and then pronounces that "truth is just the system of propositions which have an unconditional *claim* to be recognized as *valid*."[5] And lest he should not have made the paradox of this confusion evident enough, he repeats (p. 273) that "the truth of a statement means not the actual fact of its recognition" (i.e. of its *de facto* validity), "but its *rightful claim* on our recognition" (p. 274).[6] In short, as he does not distinguish between 'claim' and 'right', he cannot see that the question of truth is as to when and how a 'claim' is to be recognized as 'rightful'. And though he wisely refrains from even attempting to tell us how the clamorousness of a claim is going to establish its validity, it is clear that his failure to observe the distinction demolishes his definition of truth.

Mr. Joachim's *Nature of Truth* does not exemplify this confusion so clearly merely because it does not get to the point at which it is revealed. His theory of truth breaks down before this point is reached. He conceives the nature of truth to concern only the question of what 'the ideal' should be, even though it should be unattainable by man, as indeed it turns out to be. Thus the problem of how *we* validate claims to truth is treated as irrelevant.[7] Hence it is only casually that phrases like 'entitled to claim' occur (p. 109), or that the substantiating of a claim to truth is said to consist in its recognition and adoption "by all intelligent people" (p. 27). Still on p. 118 it seems to be implied that a "thought which claims truth as affirming universal meaning" need not undergo any further verification. It is evident, in short, that not much can be expected from theories which have overlooked so vital a distinction. Their unawareness of it will vitiate all their discussions of the nature of 'truth', by which they will mean now the one sense, now the other, and now both, in inextricable fallacy.

II

Our provisional analysis, therefore, has resulted in our detecting an important ambiguity in the conception of truth which, unless it can be cleared up, must hopelessly vitiate all discussion. In view of this distressing situation it becomes our bounden duty to inquire *how an accepted truth may be distinguished from a mere claim, and how a claim to truth may be validated.* For any logic which aims at dealing with actual thinking the urgency of this inquiry can hardly be exaggerated. But even the most 'purely' intellectual and futilely formal theory of knowledge can hardly refuse to undertake it. For the ambiguity which raises the problem is absolutely all-pervading. As we saw, a formal claim to truth is co-extensive with the sphere of logical judgment. No judgment proclaims its own fallibility; its formal claim is always to be true. We are always liable, therefore, to misinterpret every judgment. We may take as a validated truth what in point of fact is really an unsupported claim. But inasmuch as such a claim may always be erroneous, we are constantly in danger of accepting as validly true what, if tested, would be utterly untenable. Every assertion is ambiguous, and as it shows no outward indication of what it really means, we can hardly be said to know the meaning of any assertion whatsoever. On any view of logic, the disastrous and demoralizing consequences of such a situation may be imagined. It is imperative therefore to distinguish sharply between the formal inclusion of a statement in the sphere of *truth-or-falsity*, and its incorporation into a system of tested truth. For unless we do so, we simply court deception.

This possibility of deception, moreover, becomes the more serious when we realize how impotent our formal logic is to conceive this indispensable distinction and to guard us against so fatal a confusion. Instead of proving a help to the logician it here becomes a snare, by reason of the fundamental abstraction of its standpoint. For if, following Mr. Alfred Sidgwick's brilliant lead, we regard as Formal Logic every treatment of our cognitive processes which abstracts from the concrete application of our logical functions to actual cases of knowing, it is easy to see that no such logic can help us, because the meaning of an assertion can never be determined apart from the actual application.[8] From the mere verbal form, that is, we cannot tell whether we are dealing with a valid judgment or a sheer claim. To settle this, we must go behind the statement: we must go into the rights of the case. Meaning depends upon purpose, and purpose is a question of psychical fact, of the context and use of the form of words in actual knowing. But all this is just what the abstract standpoint of Formal Logic forbids us to examine. It conceives the meaning of a proposition to be somehow inherent in it as a form of words, apart from its use. So when it

finds that the same words may be used to convey a variety of meanings in various contexts, it supposes itself to have the same form, not of words, but of judgment, and solemnly declares it to be as such ambiguous, even though in each actual case of use the meaning intended may be perfectly clear to the meanest understanding! It seems more than doubtful, therefore, whether a genuine admission of the validity of our distinction could be extracted from any formal logician. For even if he could be induced to admit it in words, he would yet insist on treating it too as purely formal, and rule out on principle attempts to determine how *de facto* the distinction was established and employed.

Although, therefore, our distinction appears to be as clear as it is important, it does not seem at all certain that it would be admitted by the logicians who are so enamoured of truth in the abstract that they have ceased to recognize it in the concrete. More probably they would protest that logic was being conducted back to the old puzzle of a general criterion of truth and error, and would adduce the failures of their predecessors as a valid excuse for their present apathy. Or at most they might concede that a distinction between a truth and a claim to truth must indeed be made, but allege that it could not take any but a negative form. The sole criterion of truth, that is, which can be given, is that truth is not self-contradictory or incoherent.

This statement, in the first place, means a refusal to go into the actual question how truth is made: it is an attempt to avoid the test of application, and to conceive truth as inherent in the logical terms in the abstract. But this is really to render 'truth' wholly *verbal*. For the inherent meanings are merely the established meanings of the words employed. It is, secondly, merely dogmatic assertion: it can hardly inspire confidence so long as it precedes and precludes examination of the positive solutions of the problem, and assumes the conceptions of 'self-contradiction' or 'incoherence' as the simplest things in the world. In point of fact neither of them has been adequately analysed by intellectualist logicians, nor is either of them naturally so translucent as to shed a flood of light on any subject. As, however, we cannot now enter upon their obscurities, and examine what (if anything) either 'coherence' or 'consistency' really means, it must suffice to remark that Capt. H. V. Knox's masterly article in the April (1905) number of *Mind*[9] contains ample justification for what I have said about the principle of contradiction. If on the other hand the 'negative criterion' be stated in the form of incoherence, I would inquire merely how intellectualist logic proposes to distinguish the logical coherence, to which it appeals, from the psychological coherence, which it despises. Until this difficult (or impossible?) feat has been achieved, we may safely move on.[10]

III

Let us proceed therefore to discard old prejudices and to consider how in point of fact we sift claims and discriminate between 'claims' and 'truths', how the raw material of a science is elaborated into its final structure, how, in short, truth is made. Now this question is not intrinsically a hopeless one. It is not even particularly difficult in theory. For it concerns essentially facts which may be observed, and with care and attention it should be possible to determine whether the procedures of the various sciences have anything in common, and if so what. By such an inductive appeal to the facts, therefore, we greatly simplify our problem, and may possibly discover its solution. Any obstacle which we may encounter will come merely from the difficulty of intelligently observing the special procedures of so many sciences and of seizing their salient points and general import; we shall not be foredoomed to failure by any intrinsic absurdity of our enterprise.

Now it would be possible to arrive at our solution by a critical examination of every known science in detail, but it is evident that this procedure would be very long and laborious. It seems better, therefore, merely to state the condensed results of such investigations. They will in this shape stand out more clearly and better exhibit the trend of an argument which runs as follows: —

It being taken as established that the sphere of logic is that of the antithetical valuations 'true' and 'false', we observe, in the first place, that in every science the effective truth or falsity of an answer depends on its relevance to the question raised in that science. It does not matter that a physicist's language should reek of 'crude realism' or an engineer's calculations lack 'exactness', if both are right enough for their immediate purpose. Whereas, when an irrelevant answer is given, it is justly treated as nonexistent for that science; no question is raised whether it is 'true' or 'false'. We observe, secondly, that every science has a definitely circumscribed subject-matter, a definite method of treating it, and a definitely articulated body of interpretations. Every science, in other words, forms a system of truths about some subject. But inasmuch as every science is concerned with some aspect of our total experience, and no science deals with that whole under every aspect, it is clear that sciences arise by the limitation of subjects, the selection of standpoints, and the specialization of methods. All these operations, however, are artificial, and in a sense arbitrary, and none of them can be conceived to come about except by the action of a purposing intelligence. It follows that the nature of the purpose which is pursued in a science will yield the deepest insight into its nature; for what we want to know in the science will determine the questions we put, and their bearing on the questions put will determine the standing of the answers we

attain. If we can take the answers as relevant to our questions and conducive to our ends, they will yield 'truth'; if we cannot, 'falsity'.[11]

Seeing thus that everywhere truth and falsity depend on the purpose which constitutes the science and are bestowed accordingly, we begin to perceive, what we ought never to have forgotten, that the predicates 'true' and 'false' are not unrelated to 'good' and 'bad'. For good and bad also (in their wider and primary sense) have reference to purpose. 'Good' is what conduces to, 'bad' what thwarts, a purpose. And so it would seem that 'true' and 'false' were valuations, forms of the 'good'-or-'bad' which indicates a reference to an end. Or, as Aristotle said long ago, "in the case of the intelligence which is theoretical, and neither practical nor productive, its 'good' and 'bad' is 'truth' and 'falsehood'."[12]

Truth, then, being a valuation, has reference to a purpose. What precisely that reference is will depend on the purpose, which may extend over the whole range of human interest. But it is only in its primary aspect, as valued by individuals, that the predication of 'truth' will refer thus widely to any purpose any one may entertain in a cognitive operation. For it stands to reason that the power of constituting 'objective' truth is not granted so easily. Society exercises almost as severe a control over the intellectual as over the moral eccentricities and nonconformities of its members; indeed it often so organizes itself as to render the recognition of *new* truth nearly impossible. Whatever, therefore, individuals may recognize and value as 'true', the 'truths' which *de facto* prevail and are recognized as objective will only be a *selection* from those we are subjectively tempted to propound. There is, therefore, no real danger lest this analysis should destroy the 'objectivity' of truth and enthrone subjective licence in its place.

A further convergence in our truth-valuations is produced by the natural tendency to subordinate all ends or purposes to the ultimate end or final purpose, 'the Good'. For in theory, at least, the 'goods', and therefore the 'truths', of all the sciences are unified and validated by their relation to the Supreme Good. In practice no doubt this ideal is far from being realized, and there arise at various points conflicts between the various sorts of values or goods, which doubtless will continue until a perfect harmony of all our purposes, scientific, moral, aesthetic, and emotional has been achieved. Such conflicts may, of course, be made occasions for theatrically opposing 'truth' to (moral) 'goodness', 'virtue' to 'happiness', 'science' to 'art', etc., and afford much scope for dithyrambic declamation. But a sober and clear-headed thought will not be intolerant nor disposed to treat such oppositions as final and absolute: even where under the circumstances their reality must provisionally be admitted, it will essay rather to evaluate each claim with reference to the highest conception of ultimate good which for the time being seems attainable. It will be very chary, therefore, of sacrificing either side beyond recall; it

will neither allow the claims of truth to oppress those of moral virtue nor those of moral virtue to suppress art. But it will still more decidedly hold aloof from the quixotic attempt to conceive the sphere of each valuation as independent and as wholly severed from the rest.

IV

We have seen so far that truth is a form of value, and the logical judgment a valuation; but we have not yet raised the question as to what prompts us in bestowing or withholding this value, what are our guiding principles in thus evaluating our experience. The answer to this question takes us straight into the heart of Pragmatism. Nay, the answer to this question *is* Pragmatism, and gives the sense in which Pragmatism professes to have a criterion of truth. For the pragmatist contends that he has an answer which is simple, and open to inspection and easily tested. He simply bids us go to the facts and observe the actual operations of our knowing. If we will but do this, we shall 'discover' that in all actual knowing the question whether an assertion is 'true' or 'false' is decided uniformly and very simply. It is decided, that is, by its consequences, by its bearing on the interest which prompted to the assertion, by its relation to the purpose which put the question. To add to this that the consequences must be *good* is superfluous. For if and so far as an assertion satisfies or forwards the purpose of the inquiry to which it owes its being, it is so far 'true'; if and so far as it thwarts or baffles it, it is unworkable, unserviceable, 'false'. And 'true' and 'false', we have seen, are the intellectual forms of 'good' and 'bad'. Or in other words, a 'truth' is what is useful in building up a science; a 'falsehood' what is useless or noxious for this same purpose.[13] A 'science', similarly, is 'good' if it can be used to harmonize our life; if it cannot, it is a pseudo-science or a game. To determine therefore whether any answer to any question is 'true' or 'false', we have merely to note its effect upon the inquiry in which we are interested, and in relation to which it has arisen. And if these effects are favourable, the answer is 'true' and 'good' for our purpose, and 'useful' as a means to the end we pursue.[14] Here, then, we have exposed to view the whole rationale of Pragmatism, the source of the famous paradoxes that 'truth' depends on its consequences, that the 'true' must be 'good' and 'useful' and 'practical'. I confess that to me they have never seemed more than truisms so simple that I used to fear lest too elaborate an insistence on them should be taken as an insult to the intelligence of my readers. But experience has shown that I was too sanguine, and now I even feel impelled to guard still further against two possible misapprehensions into which an unthinking philosopher might fall.

I will point out, in the first place, that when we said that truth was estimated by its consequences for some purpose, we were speaking subject to the social character of truth, and quite generally. What consequences are relevant to what purposes depends, of course, on the subject-matter of each science, and may sometimes be in doubt, when the question may be interpreted in several contexts. But as a rule the character of the question sufficiently defines the answer which can be treated as relevantly true. It is not necessary, therefore, seriously to contemplate absurdities such as, e.g., the intrusion of ethical or aesthetical motives into the estimation of mathematical truths, or to refute claims that the isosceles triangle is more virtuous than the scalene, or an integer nobler than a vulgar fraction, or that heavenly bodies must move not in ellipses but in circles, because the circle is the most perfect figure. Pragmatism is far less likely to countenance such confusions than the intellectualist theories from which I drew my last illustration. In some cases, doubtless, as in many problems of history and religion, there will be found deep-seated and enduring differences of opinion as to what consequences and what tests may be adduced as relevant; but these differences already exist, and are in no wise created by being recognized and explained. Pragmatism, however, by enlarging our notions of what constitutes relevant evidence, and insisting on *some* testing, is far more likely to conduce to their amicable settlement than the intellectualisms which condemn all faith as inherently irrational and irrelevant to knowledge. And, ideally and in principle, such disagreements as to the ends which are relevant to the estimation of any evidence are always capable of being composed by an appeal to the supreme purpose which unifies and harmonizes all our ends: in practice, no doubt, we are hardly aware of this, nor agreed as to what it is; but the blame, surely, attaches to the distracted state of our thoughts and not to the pragmatic analysis of truth. For it would surely be preposterous to expect a mere theory of knowledge to adjudicate upon and settle offhand, by sheer dint of logic, all the disputed questions in all the sciences.

My second caution refers to the fact that I have made the predication of truth dependent on relevance to a proximate rather than an ultimate scientific purpose. This represents, I believe, our actual procedure. The ordinary 'truths' we predicate have but little concern with ultimate ends and realities. They are true (at least *pro tem.*) if they serve their immediate purpose. If any one hereafter chooses to question them he is at liberty to do so, and if he can make out his case, to reject them for their inadequacy for his ulterior purposes. But even when the venue and the context of the question have thus been changed, and so its meaning, the truth of the original answer is not thereby abolished. It may have been degraded and reduced to a methodological status, but this is merely to affirm that what is true and

serviceable for one purpose is not necessarily so for another. And in any case it is time perhaps to cease complaining that a truth capable of being improved on, i.e. capable of *growing*, is so far not absolutely true, and therefore somewhat false and worthy of contempt. For such complaints spring from an *arbitrary* interpretation of a situation that might more sensibly be envisaged as meaning that none of the falsehoods, out of which our knowledge struggles in its growth, is ever wholly false. But in actual knowing we are not concerned with such arbitrary phrases, but with the bearing of an answer on a question actually propounded. And whatever really answers is really 'true', even though it may at once be turned into a stepping stone to higher truth.[15]

U

We now find ourselves in a position to lay down some Humanist definitions. Truth we may define as logical value, and a claim to truth as a claim to possess such value. The validation of such claims proceeds, we hold, by the pragmatic test, i.e. by experience of their effect upon the bodies of established truth which they affect. It is evident that in this sense truth will admit of degrees, extending from the humble truth which satisfies *some* purpose, even though it only be the lowly purpose of some subordinate end, to that ineffable ideal which would satisfy *every* purpose and unify all endeavours. But the main emphasis will clearly fall on the former: for to perfect truth we do not yet attain, and after all even the humblest truth may hold its ground without suffering rejection. No truth, moreover, can do more than do its duty and fulfill its function.

These definitions should have sufficiently borne out the claim made at the beginning (p. 487), that the pragmatic view of truth unifies experience and rationalizes the classification of the normative sciences; but it may not be amiss to add a few words on both these topics. That, in the first place, the conception of the logical judgment as a form of valuation connects it with our other valuations, and represents it as an integral part of the *ἔφεσις τοῦ ἀγαθοῦ*, of the purposive reaction upon the universe which bestows dignity and grandeur upon the struggle of human life is, I take it, evident. The theoretic importance of this conception is capital. It is easily and absolutely fatal to every form of Naturalism. For if every 'fact' upon which any naturalistic system relies is at bottom a valuation, arrived at by selection from a larger whole, by rejection of what seemed irrelevant, and by purposive manipulation of what seemed important, there is a manifest absurdity in eliminating the human reference from results which have implied it at every step. The Humanist doctrine, therefore, affords a protection against Natu-

ralism which ought to be the more appreciated by those interested in taking a 'spiritual' view of life now that it has become pretty clear that the protection afforded by idealistic absolutism is quite illusory. For the 'spiritual nature of the Absolute' does nothing to succour the human aspirations strangled in the coils of materialism: 'absolute spirit' need merely be conceived naturalistically to become as impotent to aid the theologian and the moralist as it has long been seen to be to help the scientist.[16]

The unification of logic with the other normative sciences is even more valuable practically than theoretically. For it vindicates man's right to present his claims upon the universe in their integrity, as a demand not for Truth alone, but for Goodness, Beauty, and Happiness as well, commingled with each other in a fusion one and indiscerptible; and what perhaps is for the moment more important still, it justifies our efforts to bring about such a union as we desire. Whether this ideal can be attained cannot, of course, be certainly predicted; but a philosophy which gives us the right to aspire, and inspires us with the daring to attempt, is surely a great improvement on monisms which, like Spinoza's, essay to crush us with blank and illogical denials of the relevance of human valuations to the truth of things.

In technical philosophy, however, it is good form to profess more interest in the formal relations of the sciences than in the cosmic claims and destinies of man, and so we may hasten to point out the signal aid which Humanism affords to a symmetrical classification of the sciences. If truth also is a valuation, we can understand why logic should attempt normative judgments, like ethics and aesthetics: if all the natural sciences make use of logical judgments and lay claim to logical values, we can understand also how and why the normative sciences should have dominion over them. And lastly, we find that the antithetical valuations and the distinction between claims and their selection into norms run through all the normative sciences in a perfectly analogous way. Just as not everything is true which claims truth, so not everything is good or right or beautiful which claims to be so, while ultimately all these claims are judged by their relation to the perfect harmony which forms our final aspiration.

VI

This essay was pledged at the outset to conclude with a twofold challenge, and now that it has set forth some of the advantages proffered by the pragmatic view of truth, we must revert to this challenge, in a spirit not of contentiousness so much as of anxious inquiry. For it is to be feared that a really resolute adherent of the intellectualist tradition would be unmoved and unconvinced by anything we, or any one, could say. He would simply

close his eyes and seal his ears, and recite his creed. And perhaps no man yet was ever convinced of philosophic truth against his will. But there are beginning to be signs (and even wonders) that our intellectualism is growing less resolute. So perhaps even those who are not yet willing to face the new solutions can be brought to see the gaps in the old. If therefore we bring these to their notice very humbly, but very persistently, we may enable them to see that the old intellectualism has left its victims unprovided with answers to two momentous questions. Let us ask, therefore, how, upon its assumptions, they propose (1) to evaluate a claim to truth, and (2) to discriminate between such a claim and an established truth? These two questions constitute the first part of my challenge. They are, clearly, good questions, and such that from any theory of knowledge with pretensions to completeness an answer may fairly be demanded. And if such an answer exists, it is so vital to the whole case of intellectualism, that we may fairly require it to be produced. If it is not produced, we will be patient, and hope that some day we may be vouchsafed a revelation of esoteric truth; but human nature is weak, and the longer the delay the stronger will grow the suspicion that there is nothing to produce.

The second part of our challenge refers to the intellectualist's rejection of our solution. If we are so very wrong in our very plain and positive assertion that the truth (validity) of a truth (claim) is tested and established by the value of its consequences, there ought surely to be no difficulty about producing abundant cases in which the truth (validity) of a doubtful assertion is established in some *other* way. I would ask, therefore, for the favour of *one clear case of this kind*.[17] And I make only one stipulation. It should be a case in which there really was a question, so that the *true* answer might have, before examination, turned out *false*. For without this proviso we should get no illustration of actual knowing, such as was contemplated by the pragmatist, whose theory professes to discriminate cases in which there is a real chance of acquiring truth and a real risk of falling into falsity. If on the other hand specimens merely of indubitable or verbal truths were adduced, and it were asserted that these were true not because they were useful, but simply because they were true, we should end merely in a wrangle about the historical pedigree of the truth. We should contend that it was at one time doubtful, and accepted as true because of its tested utility: our opponent would dispute our derivation and assert that it had always been true. We should agree that it was *now* indisputable, we should disagree about the origin of this feature; and the past history would usually be too little known to establish either view. And so we should get no nearer to a settlement.

By observing on the other hand *truth in the making*, inferences may be drawn to the nature of truth *already made*. And whether truth is by nature

pragmatic, or whether this is a foul aspersion on her character, it is surely most desirable that this point should be settled. Hitherto the chief obstacle to such a decision has been the fact that while in public (and still more in private) there has been much misconception, misrepresentation and abuse of our views, there have been no serious attempts to contest directly, unequivocally, and outright, any of our cardinal assertions.[18] And what perhaps is still more singular, our critics have been completely reticent as to what alternative solutions to the issues raised they felt themselves in a position to propound. They have not put forward either any account of truth which can be said ultimately to have a meaning, or one that renders it possible to discriminate between the 'true' and the 'false'. The whole situation is so strange, and so discreditable to the *prestige* of philosophy, that it is earnestly to be hoped that of the many renowned logicians who so vehemently differ from us some should at length see (and show us!) their way to refute these 'heresies', as clearly and articulately as their *θυμοειδές* permits their *φιλόσοφον*[19] and as boldly as their *φιλόσοφον* permits their *θυμοειδές* to express itself.

NOTES

1. In point of fact such denial has never been attempted: inquiries as to how logic can validly consider a 'pure' thought, abstracted from the psychological conditions of actual thinking, have merely been ignored. My *Formal Logic* may now, however, be said to have established that such 'logic' is meaningless.

2. The purport of this very elementary remark, which is still very remote from the real problem of truth, is to confute the notion, which seems dimly to underlie some intellectualist criticisms, that the specific character of the truth-predication is ignored in pragmatist quarters.

3. *Theaetetus*, 170E–171B, Jowett's translation. Italics mine.

4. *Mind*, v. N.S., 20, p. 470. Italics mine.

5. Pp. 271, 288. Italics mine.

6. Cp. also pp. 276 and 278.

7. As it is by Mr. Bradley, who, as Prof. Hoernlé remarks, "deals with the question how *we* correct our errors in a footnote!" (*Mind* xiv. 321).

8. Cp. Essays i. §2, and iii. §10.

9. N. S. No. 54; cp. *Formal Logic*, ch. x.

10. Cf. also *Humanism*, pp. 52-53.

11. But cp. note on p. 154.

12. *Eth. Nic.* vi. 2, 3. Cp. *De Anim.* iii. 7, 431b10, where it is stated that "the true and false are in the same class with the good and bad," i.e. are valuations.

13. After allowance has been made for methodological assumptions, which may turn out to be 'fictions'. 'Lies' exist as such only after they have been detected; but then they have usually ceased to be useful.

14. Strictly both the 'true' and the 'false' answers are, as Mr. Sidgwick says, subdivisions of the 'relevant', and the irrelevant is really unmeaning. But the unmeaning often seems to be relevant until it is detected; it is as baffling to our purpose as the 'false'; while the 'false' answer grows more and more 'irrelevant' as we realize its 'falsity'; it does not mean what we meant to get, viz. something we can work with. Hence it is so far unmeaning, and in a sense all that *fails* us may be treated as '*false*'.

15. Cp. Essay viii. §5. If therefore we realize that we are concerned with human 'truth' alone, and that truth is ambiguous, there is no paradox in affirmatively answering Prof. A. E. Taylor's question (*Phil. Rev.* xiv. 268) as to whether "the truth of a newly discovered theorem is created" (it should be "made," i.e. out of earlier 'truth') "by the fact of its discovery." He asks "did the doctrine of the earth's motion become true when enunciated by the Pythagoreans, false again when men forgot the Pythagorean astronomy, and true a second time on the publication of the book of Copernicus?" The ambiguity in this question may be revealed by asking: 'Do you mean "true" to refer to the valuation of the new "truth" by us, or to the *re-valuation* of the old?' For the 'discovery' involves both, and both are products of human activity. If then we grant (what is, I suppose, the case) that the Pythagorean, Ptolemaic and Copernican systems represent stages in the progress of a successful calculation of celestial motions, it is clear that each of them was valued as 'true' while it seemed adequate, and re-valued as 'false' when it was improved on. And 'true' in Prof. Taylor's question does not, for science, mean 'absolutely true'. The relativity of motion renders the demand for absolute answers scientifically unmeaning. As well might one ask, 'What exactly *is the* distance of the earth from the sun?' Moving bodies, measured by human instruments, have *no* fixed distance, no absolute place. The successive scientific truths about them are only *better* recalculations. Hence a very slight improvement will occasion a change in their valuation. Prof. Taylor has failed to observe that he has conceived the scientific problem too loosely in grouping together the Pythagorean and the Copernican theory as alike cases of the earth's motion. No doubt they may both be so denominated, but the scientific value of the two theories was very different, and the Ptolemaic system is intermediate in value as well as in time. He might as well have taken a more modern instance and argued that the emission theory of light was true 'all along' because the discovery of radio-activity has forced its undulatory rival to admit that light is sometimes produced by the impact of 'corpuscles'.

The reason then why it seems paradoxical to make the very existence of truth depend on its 'discovery' by us, is that in *some* cases there ensues upon the discovery a transvaluation of our former values, which are now re-valued as 'false', while the new 'truth' is *antedated* as having been true all along. This, however, is conditioned by the special character of the case, and would have been impossible but for the human attempt to verify the claim. When what is 'discovered' is gold in a rock, it is supposed to have been there 'all along'; when it is a burglar in a house, our common-sense rejects such antedating. So the whole distinction remains *within* the human evaluation of truth, and affords no occasion for attributing to 'truth' any real independence of human cognition: the attempt to do so really misrepresents our procedure; it is a mere error of abstraction to think that because a 'truth' may

be judged 'independent' *after* human manipulation, it is so *per se*, irrespectively of the procedure to which it owes its 'independent' existence. And to infer further that therefore logic should wholly abstract from the human side in knowing, is exactly like arguing that because children grow 'independent' of their parents, they must be conceived as essentially independent, and must have been so 'all along'.

16. Essay xii. §5.

17. Prof. Taylor attempted to answer an earlier form of this challenge in *Mind*, N.S. No. 57. My reply in N.S. No. 59, entitled 'Pragmatism and Pseudo-Pragmatism' showed that he had misunderstood even the elementary 'principle of Peirce'.

18. Prof. Taylor has now supplied this desideratum, by denying that psychology has any relevance to logic (*Phil. Rev.* xiv. pp. 267, 287). Yet immediately after (p. 287) he feels constrained to argue that the efficient cause of his accepting any belief as true is a specific form of emotion! Surely the fact that no truth can be accepted without this feeling constitutes a pretty substantial connexion between psychology and logic. Cp. Essay ii.

19. The 'spirited' and 'philosophic' parts of the soul, according to Plato.

30

THE MAKING OF TRUTH

§1. The problem of 'the making of truth' issues from the epistemological situation of the day at two points. It arises out of two burning questions—(1) how 'truth' is related to 'fact'; and (2) how 'truth' is discriminated from 'error', or how 'claims' to truth are 'validated'.

On both these questions we have already abundantly seen that the intellectualistic theories of knowledge have argued themselves into a complete *impasse*. They have put the questions in such a way that no answer is possible. Their 'doctrines' in the end amount merely to confessions of failure. They cannot understand how error is possible, or how, if it nevertheless exists, it can be discriminated from truth; and the only answer they can give to the question how truth is made, is to declare that it is never really *made*, but must pre-exist ready-made as an eternal ideal (whether in a non-human mind, or a supercelestial space, or in independent being, is a matter of taste), to which our human truths have to approximate. But when it turns out *on their own showing* that the attainment of this ideal by us is eternally impossible, what option have we but to treat this answer as no answer at all?

Again, they involve themselves in insuperable difficulties as to the rela-

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Studies in Humanism, 2nd edn. (London and New York: Macmillan, 1912), pp. 179–203.

tion of truth to fact. They start from an uncriticized assumption that truth must be the apprehension of 'independent' fact; but they cannot understand how 'fact' can be 'independent' of our knowing. For how, if it is in any way dependent on us, can it remain 'fact', or 'truth' remain true? Can we *make* 'truth' and 'fact'? Away with the monstrous, impious thought! And yet it is too plain that *our human knowing* seems to do these very things. And that in what must seem to them the most dubious ways. For it employs a multitude of arbitrary processes, commended only by the psychological hold they have over our mortal nature, and, when these are abstracted from, it simply ceases to work. But how, Intellectualism must ask, can such processes be more than subjective, how dare we attribute them to an eternal mind, to an independent reality? It would be flat absurdity. But if they are merely subjective, must they not hopelessly vitiate the facts, distort the image of reality, and utterly unfit *our* 'truth' to be the passionless mirror of reality which it is assumed it has to be?

Nor does it matter from what side this puzzle is approached. If it is approached from the 'realist' side, we come upon the sheer, unmitigated, incredible paradoxes that the 'independent fact' is (1) to be known by and in a process which *ex hypothesi* it 'transcends'; (2) to be apprehended by a subjective activity which is confessed to be largely, if not wholly, arbitrary; that (3) this is to make *no difference whatsoever* to the fact; and (4) that *we are to know this also*, to know, that is, that the 'correspondence' between the 'fact', as it is in itself and outside our knowledge, and the fact as it appears in our knowledge, is somehow perfect and complete!

If we come upon it from the absolutist side, we find an 'eternal ideal of truth' supervening upon, or perhaps taking the place of, the 'independent fact'. In the former case we have, evidently, achieved nothing but a complication of the problem. For it will now be a question how 'eternal truth' is related to 'independent fact', and also how both of them are to be related to 'truth' and 'fact' for us. But even in the latter case there is no gain, because this ideal also is still supposed to be 'independent' of us and our doings. The difficulties, therefore, remain precisely the same. Nay, they are added to by the demand that we are to know that the 'correspondence' between the human and the ideal *must be imperfect as well as perfect!* For the ideal has been so constructed that our knowledge *cannot* fully realize it, while yet it *must* fully realize it, in order that we may assure ourselves of its 'truth', by observing its 'correspondence' with the ideal! Absolute truth, therefore, as conceived by absolutism, is not merely *useless* as a criterion of *our* truth, because we do not possess it, and cannot compare it with our truth, nor estimate where and to what extent our truth falls short of its 'divine' archetype; it is not merely the adding of one more to the multitude of (human) truth-conceptions which have to be accommodated to one another, and out of

which there has to be compounded the 'objective' truth and the 'common' world of practical life. It is positively noxious, actively disruptive of the whole notion of truth, and pregnant with self-destructive consequences.

Surely this situation, the development of which has been traced in Essays ii., iii., iv., §3-5 and 7-8, and vi., should be painful and irrational enough to stagger even the most rationalistic faith in the sufficiency of intellectualistic assumptions, and to impel it at least to investigate the alternative conception of the problem which Pragmatism has had the boldness to propound!

To us, of course, it will be as clear as daylight that *the old assumptions are wrong*, proved to be wrong by the absurdity of their consequences, and must be given up. We shall infer frankly—(1) that whether or not we have constructed a wholly unexceptionable theory of knowledge, it is folly any longer to close one's eyes to the importance and all-pervasiveness of subjective activities in the making of truth. It must frankly be admitted that *truth is human truth*, and incapable of coming into being without human effort and agency; that human action is psychologically conditioned; that, therefore, the concrete fullness of human interests, desires, emotions, satisfactions, purposes, hopes, and fears is relevant to the theory of knowledge and must *not* be abstracted from.

(2) We shall perceive that the futile notion of a really 'independent' truth and fact, which cannot be known or related to us or to each other, even by the most gratuitous of miracles, must be abandoned. If we insist on preserving the word, it must at any rate be used no longer as a label for the problem of relating the human to a non-human which cannot possibly be related to it. It must, at least, be interpreted pragmatically, as a term which discriminates certain behaviours, which distinguishes certain valuations, *within* the cognitive process which evolves *both* 'truth' and 'fact' for man.[1]

(3) Instead of wasting our ingenuity, therefore, in trying to unite conceptions which we have ourselves made contradictory, let us try the alternative adventure of *a thoroughly and consistently dependent truth*, dependent, that is, on human life and ministering to its needs, made by us and referring to our experience, and evolving everything called 'real' and 'absolute' and 'transcendent *immanently* in the course of its cognitive functioning. It will have at least this great initial advantage over theories which assume an antithesis between the human and the 'ideal' or the 'real', that its terms will not have to be laboriously brought into relation with each other and with human life.

§2. The second question, as to how claims to have judged 'truly' are to be made good, and how 'truth' is to be distinguished from 'error', raises the problem of the 'making of Truth' in a still more direct fashion. Indeed it may in this form be said to be the pragmatic problem *par excellence*, and we have already taken some steps towards its solution. We have seen the nature of

the distinction between 'claim' and 'validity' and its importance (Essay v.). We may also take it for granted that as there is nothing in the claim itself to tell us whether it is valid or not (Essay iii. §18), the validation of claims must depend on their consequences (Essay i.). We have also vindicated the right of our actual human knowledge to be considered by Logic in its full concreteness (Essay iii.). We have noted, lastly, that the collapse of the rationalistic theory of truth was to be traced to its inveterate refusal to do this (Essays v., ii., vi., and iii.), and more particularly to recognize the problem of error, and to help human reasoners to discriminate between it and truth.

But all this is not enough to give us a positive grasp of the making of truth. To do this we must analyse a simple case of actual knowing in greater detail. But this is difficult, not so much because of any intrinsic difficulty of being aware of what we are doing, as because the contemplation of actual human knowledge has fallen into such disuse, and the simplest facts have been translated into the language of such weird fictions, that it is hard to bespeak sufficient attention for what actually occurs. Philosophers have strained their ingenuity to prove that it is impossible, or at least indefensible, to test the simplest truth in the most obvious manner, without dragging in 'the a priori Deduction of the Categories', or the 'Dialectic of the Notion'. And all the while they are oblivious of the very real presuppositions of our knowing, and systematically exclude from their view the fact that all our 'truths' occur as personal affirmations in the life of persons practically interested to attain truth and to avoid error. Thus, when I take some one coming towards me from a distance to be my brother, and subsequently perceive that he is not, this correction of a false claim seems an act of cognition well within the powers of any man: it seems gratuitous to regard it as a privilege reserved for the initiates of 'the higher Logic', the seers of 'the Self-development of the Absolute Idea', while totally ignoring such facts as that I was (*a*) anxiously expecting my brother, but also (*b*) unfortunately afflicted with short-sightedness.

§3. Let us begin, then, quite simply and innocently, with our immediate experience, with the actual knowing, just as we find it, of our own adult minds. This proposal may seem hopelessly 'uncritical', until we realize—(1) that our actual minds are always the *de facto* starting-points, from which, and with the aid of which, we *work back* to whatever 'starting-points' we are pleased to call 'original' and 'elementary'; (2) that we always read our actual minds into these other starting-points; (3) that no subtlety of analysis can ever penetrate to any principles really certain and undisputable *to start with*; (4) that such principles are as unnecessary as they are impossible, because we only need principles which will work and grow more certain *in their use*, and that so even initially defective principles, which are improved, will turn out truer than the truest we could have

started with; (5) that in all science our actual procedure is 'inductive', experimental, postulatory, tentative, and that the demonstrative form, into which the conclusions may afterwards be put, is merely a trophy set up to mark the victory. If we are met with reluctance to accept our contentions, let us not delay in order to argue them out, but proceed with the pragmatic confidence that, if they are provisionally assumed, the usefulness of the resulting view of knowledge will speedily establish them.

By tentatively assuming, then, this 'common sense' starting-point, we are enabled to observe that even one of the simplest acts of knowing is quite a complicated affair, because in it we are (1) using a mind which has had some prior experience and possesses some knowledge, and so (2) has acquired (what it greatly needs) some basis in reality, which it is *willing to accept as 'fact'*, because (3) it needs a 'platform' from which *to operate further on a situation* which confronts it, in order (4) to realize some *purpose* or to satisfy some *interest*, which defines for it an 'end' and constitutes for it a 'good'. (5) It consequently *experiments* with the situation by some voluntary interference, which may begin with a tentative predication, and proceed by reasoned inferences, but always, when completed, comes to a *decision* ('judgment') and issues in an *act*. (6) It is guided by the results ('consequences') of this experiment, which go to verify or to disprove its provisional basis, the initial 'facts', predications, conceptions, hypotheses, and assumptions. Hence (7) if the results are satisfactory, the reasoning employed is deemed to have been *pro tanto good*, the results *right*, the operations performed *valid*, while the conceptions used and the predications made are judged *true*. Thus successful predication extends the system of knowledge and enlarges the borders of 'fact'. Reality is like an ancient oracle, and does not respond until it is questioned. To attain our responses we make free to use all the devices which our whole nature suggests. But when they are attained, the predications we judge to be 'true' afford us fresh revelations of reality. Thus Truth and Reality grow for us *together*, in a single process, which is *never* one of bringing the mind into relation with a fundamentally alien reality, but always one of improving and extending an already existing system which *we know*.

Now this whole process is clearly dominated by the *pragmatic test of truth*. The claims to truth involved are validated by their consequences when used. Thus Pragmatism as a logical method is merely the *conscious* application of a *natural* procedure of our minds in actual knowing. It merely proposes (1) to realize clearly the nature of these facts, and of the risks and gains which they involve, and (2) to simplify and reform logical theory thereby.

§4. We may next consider some of these points in greater detail. First as to the use of an already formed mind (§3 (1)). That empirically knowl-

edge arises out of pre-existing knowledge, that we never operate with a raw and virgin mind, has been an epistemological commonplace ever since it was authoritatively enunciated by Aristotle, though the paradox it involves with regard to the first beginning of knowledge has never quite been solved. For the present, however, we need only add that the development of a mind is a thoroughly *personal* affair. Potential knowledge becomes actual, because of the purposive activity of a knower who brings it to bear on his interests, and uses it to realize his ends. Knowledge does not grow by a mechanical necessity, nor by the self-development of abstract ideas in a psychological vacuum.

§5. Next, as to the acceptance of a basis of fact (§3 (2)). It is extraordinary that even the most blindly hostile critic should have supposed Pragmatism to have denied this. It has merely pointed out that the *acceptance* must not be ignored, and that it is fatal to the chimera of a 'fact' for us existing quite 'independently' of our 'will'.

It is, however, important to note the *ambiguity of 'fact'*. (1) In the wider sense everything is 'fact', *qua* experienced, including imaginings, illusions, errors, hallucinations. 'Fact' in this sense is anterior to the distinction of 'appearance' and 'reality', and covers *both*. To distinguish it we may call it 'primary reality'.[2] For though it is always perceived by us in ways defined, or 'vitiated', by our past interests and acts (individual and racial), and we are rarely conscious of all we read into our data, there is undeniably a 'given' in experience, or rather a givenness about it. We never experience it as purely given, and the nearer it comes to this the less we value it, but in a sense this 'primary reality' is important. For it is the starting-point, and final touchstone, of all our theories *about* reality, which have for their aim its transformation. It may, certainly, in a sense, be called 'independent' of us, if that comforts any one. For it is certainly not 'made' by us, but 'found'. But, as it stands, we find it most unsatisfactory and set to work to remake it and unmake it. It is not what we mean by 'real fact' or 'true reality'. For, as immediately experienced, it is a meaningless chaos, merely the raw material of a cosmos, the stuff out of which real fact is made. Thus the need of operating on it is the real justification of our cognitive procedures.

These make it into (2) 'fact' in the stricter and more familiar sense (with which alone scientific discussion is concerned), by processes of analysis, *selection* and *valuation*, which *segregate* the 'real' from the 'apparent' and the 'unreal'. It is only *after* such processes have worked upon 'primary reality' that the distinction of 'appearance' and 'reality' appears, on which intellectualism seeks to base its metaphysic. But it has failed to observe that the ground it builds on is already hopelessly vitiated for the purpose of erecting a temple to its idol, the 'satisfaction of pure intellect'. For in this selection of 'real reality' our interests, desires, and emotions inevitably play

a leading part, and may even exercise an overpowering influence fatal to our ulterior ends.

Individual minds differ as greatly in their acceptance of 'facts' as in other respects. Some can never be got to face *unpleasant* 'facts', or will accept them only at the point of the sword. Most prefer to contemplate the more agreeable alternative. A few are driven by their fears unduly to accept the worse alternative. The devices for ideally rectifying the harshnesses of actual experience are endless. We console ourselves by postulating ideal realities, or extensions of reality, capable of transfiguring the repugnant character of actual life. We so conceive it, or interpret it, as to transform it into a 'good'. Or sometimes plain and generally recognized 'facts' are disposed of by a sheer assertion of their 'unreality', as is, e.g., the existence of pain by 'Christian Science', and of evil by absolutist metaphysics. It is clear that psychologically all these attitudes towards 'fact' more or less work, and so have a certain value.

It is clear also that the recognition of 'fact' is by no means a simple affair. 'Facts' which can be excluded from our lives, which do not interest us, which mean nothing to us, which we cannot use, which are ineffective, which have little bearing on practical life, tend to drop into unreality. Our neglect, moreover, really tends to make them unreal, just as, conversely, our preference for the ideals we postulate makes them real, at least as factors in human life.

The common notion, therefore, that 'fact' is something independent of our recognition, needs radical revision, in the only sense of 'fact' which is worth disputing. It must be admitted that without a process of selection by us, there are no real facts for us, and that this selecting is immensely arbitrary. It would, perhaps, be infinitely so, but for the limitations of human imagination and tenacity of purpose in operating on apparent fact.

§6. Through this atmosphere of emotional interest, how shall we penetrate to any 'objective' fact at all? Where shall we find the 'hard facts' our forefathers believed in, which are so whether we will them or not, which extort recognition even from our sturdiest reluctance, whose unpleasantness *breaks* our will and does not *bend* to it?

Certainly it may not be quite easy to discern the old objective facts in their new dress, but that is a poor reason for denying them the subjective atmosphere in which they have to live.

(1) We may begin, however, by remarking on the curious equating of 'objective' with 'unpleasant' facts and truths. Its instinctive pessimism seems to imply a mind which is so suspicious of fact that it can be driven to recognize the reality of anything only by pains and penalties, which is so narrowly contented with its existing limitations as to be disposed to regard all novelties as unwelcome intrusions, which has, in short, to be *forced* into the presence of truth, and will not go forth to seek it and embrace it. Such, certainly, is not the frame of mind and temper of the pragmatist, who

prefers to conceive 'the objective' as that which he aims at and from, and contends that though 'facts' may at times coerce, it is yet more essential to them to be 'accepted', to be 'made', and to be capable of being '*remade*'.

(2) At all events, he thinks that the coerciveness of 'fact' has been enormously exaggerated by failure to observe that it is never sheer coercion, but always mitigated by his choice and acceptance, by which it ceases to be *de facto* thrust upon him, and becomes *de jure* 'willed'. Even a forced move, he feels, is better than no power to move at all; and the game of life is not wholly made up of forced moves.

(3) He finds no difficulty, therefore, in the conception of *unpleasant* 'fact'. It indicates the better of two disagreeable alternatives. And he can give good reasons for accepting unpleasant fact, without on that account conceiving 'fact' as such to be unpleasant and coercive. He may (*a*) accept it as the *less unpleasant* alternative, and to avoid worse consequences, much as man may wear spectacles rather than go blind. He may (*b*) prefer to sacrifice a cherished prejudice rather than to deny, e.g., the evidence of his senses, or to renounce the use of his 'reason'. He may (*c*) accept it *provisionally*, without regarding it as absolute, merely for the purposes of the act or experiment he is contemplating. For to recognize the *pragmatic reality* of an unpleasant fact means nothing metaphysical, and entails no serious consequences. It only implies willingness to accept it for the time being, and is quite compatible with a disbelief in its ultimate reality, and with its subsequent reduction to unreality or illusion. Hence (*d*) such a pragmatic acceptance of unpleasant fact does not impair our liberty of action; it is no obstacle to subsequent experimentation, which may 'discover' the illusoriness of the presumed 'fact'. But even where it does not lead to this, it may (*e*) be a preliminary to making the unpleasant fact *unreal*, and putting something better in its place; thus proving, in another way, that it never was the absolute hard fact it was supposed to be, but dependent on our inaction for its continued existence.

Thus (4) it turns out that the existence of unpleasant fact, so far from being an objection to the pragmatic view of fact, is an indispensable ingredient in it. For it supplies the motive for that transformation of the existing order, for that unmaking of the real which has been made amiss, which, with the making fact of the ideal and the preservation of the precious, constitutes the essence of our cognitive endeavour. To attain our 'objective', the 'absolutely objective fact', which would be absolutely satisfactory,[3] we need a 'platform' whence to act and aim. 'Objective fact' is just such a platform. Only there is no need to conceive it as anchored to the eternal bottom of the flux of time: it floats, and so can move with the times, and be adjusted to the occasion.

§7. As to §3 (4) we have already seen that interest and purpose can be eliminated from cognitive process only at the cost of stopping it (Essay iii.

§7). A being devoid of interests would not *attend* to anything that happened, would not *select* or *value* one thing rather than another, nor would any one thing make more of an impression on its apathy than any other. Its mind and its world would remain in the chaos of primary reality (§5), and resemble that of the 'Absolute'[4] (if it can be said to have a mind).

The human mind, of course, is wholly different. It is full of interests, all of which are directly or indirectly referable to the functions and purposes of life. Its organization is biological and teleological, and in both cases selective. If we except a few abnormal and morbid processes such as idiocy, insanity, and dream, mental life may be called wholly purposive; that is, its functioning is not intelligible without reference to actual or possible purposes, even when it is not aiming at a definite, clearly-envisaged end. Definite purposes are, it is true, of gradual growth. They arise by selection, they crystallize out from a magma of general interestedness and vaguely purposive actions, as we realize our true vocation in life, much as 'real' reality was selected out of 'primary'. Thus we become more and more clearly conscious of our 'ends', and more and more definite in referring our 'goods' to them. But this reference is rarely or never carried through completely, because our nature is never fully harmonized. And so our 'desires' may continue to hanker after 'goods' which our 'reason' cannot sanction as conducive to our ends, or our intelligence may fail to find the 'good' means to our ends, and be deceived by current valuations of goods which are really evils. Thus the 'useful' and the 'good' tend to fall apart, and 'goods' to seem incompatible. But properly and ideally, there are no goods which are not related to the highest Good, no values which are not goods, no truths which are not values, and therefore, none which are not useful in the widest sense.

§8. As to §3 (5), Experience is experiment, i.e. *active*. We do not learn, we do not live, unless we try. Passivity, mere acceptance, mere observation (could they be conceived) would lead us nowhere, least of all to knowledge.

(1) Every judgment refers sooner or later to a concrete situation which it analyses. In an ordinary judgment of sense-perception, as, e.g., 'This is a chair', the subject, the 'this', denotes the product of a selection of the relevant *part* of a given whole. The selection is arbitrary, in that it ignores all the rest of the situation 'given' along with the 'this'. If taken in abstraction, as intellectualism loves to do, it seems *wholly arbitrary*, unintelligible, and indefensible. In the concrete, however, the judgment *when made* is always purposive, and its selection is justified, or refuted, by the subsequent stages of the ideal experiment. The 'objective control' of the subjective freedom to predicate is not effected by some uncomprehended pre-existing fact: it comes *in the consequences of acting out the predication*. So our analyses are arbitrary only if and in so far as we are not willing to *take* their consequences upon us. Similarly the predicate, which includes the 'this' in a conceptual system already

established, is arbitrary in its selection. Why did we say 'chair', and not 'sofa' or 'stool'? To answer this we must go on to *test* the predication.

For (2) every judgment is essentially an experiment, which, to be tested, must be acted on. If it is really true that 'this' is a chair, it can be sat in. If it is a hallucination, it cannot. If it is broken, it is not a chair in the sense my interest demanded. For I made the judgment under the prompting of a desire to sit.

If now I stop at this point, without acting on the suggestion contained in the judgment, the claim to truth involved in the assertion is never tested, and so cannot be validated. Whether or not 'this' was a chair, cannot be known. If I consent to complete the experiment, the consequences will determine whether my predication was 'true' or 'false'. The 'this' may not have been a chair at all, but a false appearance. Or the antique article of ornamental furniture which broke under my weight may have been something too precious to be sat in. In either case, the 'consequences' not only decide the validity of my judgment, but also alter my conception of reality. In the one case I shall judge henceforth that reality is such as to present me with illusory chairs; in the other, that it contains also chairs *not* to be sat in. This then is what is meant by the pragmatic testing of a claim to truth.[5]

§9. As to the reaction of the consequences of an experimental predication upon its 'truth' (§3 (6)), the simplest case is that (1) of a successful validation. If, in the example of the last section, I can sit in the 'chair', my confidence in my eyesight is confirmed and I shall trouble little whether it ought not rather to have been called a 'sofa' or a 'stool'. Of course, however, if my interest was not that of a mere sitter, but of a collector or dealer in ancient furniture, my first judgment may have been woefully inadequate, and may need to be revised. 'Success', therefore, in validating a 'truth', is a relative term, *relative to the purpose* with which the truth was claimed. The 'same' predication may be 'true' for me and 'false' for you, if our purposes are different. As for a truth in the abstract, and relative to no purpose, it is plainly unmeaning. Until some one asserts it, it cannot become even a claim, and be tested, and cannot, therefore, be validated. Hence the truth of 'the proposition' 'S is P', when we affirm it on the strength of an actually successful predication, is only potential. In applying it to other cases we always take a risk. The next time 'this' may not be a 'chair', even though it may look the 'same' as the first time. Hence even a fully successful predication cannot be converted into an 'eternal truth' without more ado. The empirical nature of reality is such that we can never argue from one case to a *similar* one, which *we take to be* 'the same', with absolute assurance a priori; hence no 'truth' can ever be so certain that it need not be verified, and may not mislead us, when applied. But this only means that no truth should be taken as unimprovable.

(2) Experiments, however, are rarely quite successful. We may (*a*) have had to purchase the success we attain by the use of artificial abstractions and simplifications, or even downright fictions, and the uncertainty which this imports into the 'truth' of our conclusions will have to be acknowledged. We shall, therefore, conceive ourselves to have attained, not complete truths without a stain upon their character, which there is no reason to doubt, but only 'approximations to truth' and 'working hypotheses', which are, at most, 'good enough for practical purposes'. And the principles we used we shall dub *methodological* 'truths' or 'fictions', according to our bias. And, clearly, the cognitive endeavour will not in this case rest. We shall not have found a 'truth' which fully satisfies even our immediate purpose, but shall continue the search for a more complete, precise, and satisfactory result. In the former case, the cognitive interest of the situation could be renewed only by a change or growth of purpose leading to further judgments.

(3) The, experiment may fail, and lead to unsatisfactory results. The interpretation then may become extremely complex. Either (*a*) we may put the blame on our subjective manipulation, on our use of our cognitive instruments. We may have observed wrongly. We may have reasoned badly. We may have selected the wrong conceptions. We may have had nothing but false conceptions to select from, because our previous knowledge was as a whole inadequate. Or we may be led to doubt (*b*) the basis of fact which we assumed, or (*c*) the practicability of the enterprise we were engaged in. In either of the first two cases we shall feel entitled to try again, with variations in our methods and assumptions; but repeated failure may finally force even the most stubborn to desist from their purpose, or to reduce it to a mere postulate of rationality which it is as yet impossible to apply to actual experience. And, needless to say, there will be much difference of opinion as to where, in case of failure, the exact flaw lies, and how it may best be remedied. Herein, however, lies one reason (among many) why the discovery of truth is such a personal affair. The discoverer is he who, by greater perseverance or more ingenious manipulation, makes something out of a situation which others had despaired of.

§10. We see, then, *how truth is made*, by human operations on the data of human experience. Knowledge grows in extent and in trustworthiness by successful functioning, by the assimilation and incorporation of fresh material by the previously existing bodies of knowledge. These 'systems' are continually verifying themselves, proving themselves true by their 'consequences', by their power to assimilate, predict and control fresh 'fact'. But the fresh fact is not only assimilated; it also transforms. The old truth looks different in the new light, and really changes. It grows more powerful and efficient. Formally, no doubt, it may be described as growing more 'coherent' and more highly 'organized', but this does not touch the kernel of the

situation. For the 'coherence' and the 'organization' both exist in our eyes, and relatively to our purposes: it is *we* who judge what they shall mean. And what we judge them by is their conduciveness to our ends, their effectiveness in harmonizing our experience. Thus, here again, the intellectualist analysis of knowledge fails to reach the really motive forces.

§11. It is important, further, to point out that *looking forward* the making of truth is clearly a continuous, progressive, and cumulative process. For the satisfaction of one cognitive purpose leads on to the formulation of another; a new truth, when established, naturally becomes the presupposition of further explorations. And to this process there would seem to be no actual end in sight, because in practice we are always conscious of much that we should like to know, if only we possessed the leisure and the power. We can, however, conceive an ideal completion of the making of truth, in the achievement of a situation which would provoke no questions and so would inspire no one with a purpose to remake it, and on this ideal the name absolute truth may be bestowed.

Looking backwards, the situation, as might have been expected, is less plain. In the first place there are puzzles, which arise from the natural practice of *re-valuing* superseded 'truths' as 'errors', and of *antedating* the new truths as having been 'true all along'. So it may be asked: 'What were these truths *before* they were discovered?' This query is essentially analogous to the child's question: 'Mother, what becomes of yesterday?' and by any one who has understood the phraseology of time in the one case and of the making of truth in the other, the difficulty will be seen to be merely verbal. If 'true' means (as we have contended) 'valued by us', of course the new truth becomes true only when 'discovered'; if it means 'valuable *if* discovered', it was of course hypothetically 'true'; if, lastly, the question inquires whether a past situation would not have been *altered for the better*, if it had included a recognition of this truth, the answer is: 'Yes, probably; only unfortunately, it was not so altered'. In none of these cases, however, are we dealing with a situation which can be even intelligibly stated apart from the human making of truth.[6] Again, it is by no means easy to say how far our present processes of making truth are validly to be applied to the past, how far *all* truth can be conceived as having been made by the processes which we now see in operation.

(1) That we must try to conceive it thus is, indeed, obvious. For why should we gratuitously assume that the procedure by which 'truth' is now being made differs radically from that whereby truth initially came into being? Are we not bound to conceive, if possible, the whole process as continuous, truth made, truth making, and truth yet to be made, as successive stages in one and the same endeavour? And to a large extent it is clear that this can be done, that the established truths, from which our experiments

now start, are of a like nature with the truths we make, and were themselves made in historical times.

(2) Before, however, we can generalize this procedure, we have to remember that on our own showing, we disclaimed the notion of making truth out of nothing. We did not have recourse to the very dubious notion of theology called 'creation out of nothing', which no human operations ever exemplify. We avowed that our truths were made out of previous truths, and built upon pre-existing knowledge; also that our procedure involved an initial recognition of 'fact'.

(3) Here, then, would seem to be two serious, if not fatal, limitations upon the claim of the pragmatic 'making of truth' to have solved the mystery of knowledge. They will need, therefore, further examination, though we may at once hasten to state that they cannot affect the validity of what the pragmatic analysis professed to do. It professed to show the reality and importance of the human contribution to the making of truth; and this it has amply done. If it can carry us further, and enable us to humanize our world completely, so much the better. But this is more than it bargained to do, and it remains to be seen how far it will carry us into a comprehension also of the apparently non-human conditions under which our manipulations must work.

§12. Now as regards the previous knowledge assumed in the making of truth, it may be shown that there is no need to treat it in any but a pragmatic way. For (1) it seems quite arbitrary to deny that the truths which we happen to assume in making new truths are the same in kind as the very similar truths we make by their aid. In many cases, indeed, we can show that these very truths were made by earlier operations. There is, therefore, so far, nothing to hinder us from regarding the volitional factors which actual knowing now exhibits, viz. desire, interest, and purpose, as essential to the process of knowing, and similarly the process by which new truth is now made, viz. postulation, experiment, action, as essential to the process of verification.

Moreover (2), even if we denied this, and tried to find truths that had never been made, it would avail us nothing. We never can get back to truths so fundamental that they cannot possibly be conceived as having been made. There are no a priori truths which are indisputable, as is shown by the mere fact that there is not, and never has been, any agreement as to what they are. All the 'a priori truths', moreover, which are commonly alleged, can be conceived as postulates suggested by a previous situation.[7]

(3) Methodologically, therefore, it leads us nowhere to assume that within the truth which is made there exists an uncreated residuum or core of elementary truth, which has not been made. For we can never get at it, or know it. Hence, even if it existed, the theory of our knowing could take no note of it. All truth, therefore, must, methodologically, be treated as if it had been 'made'. For on this assumption alone can it reveal its full signifi-

cance. In so far, therefore, as Pragmatism does not profess to be more than a method, it has no occasion to modify or correct an account of truth which is adequate to its purpose, for the sake of an objection which is methodologically null.

(4) It seems a little hard on Pragmatism to expect from it a solution of a difficulty which confronts alike all theories of knowledge. In all of them the beginning of knowledge is wrapped in mystery. It is a mystery, however, which even now presses less severely on Pragmatism than on its competitors. For the reason that it is not a retrospective theory. Its significance does not lie in its explanation of the past so much as in its *present* attitude towards the *future*. The past is dead and done with, practically speaking; its deeds have hardened into 'facts', which are accepted, with or without enthusiasm; what it really concerns us to know is *how to act with a view to the future*. And so like life, and as befits a theory of human life, Pragmatism faces towards the future. It can adopt, therefore, the motto *solvitur ambulando*, and be content if it can conceive a situation in which the problem would *de facto* have disappeared. The other theories could not so calmly welcome a 'psychological' solution as 'logically' satisfactory. But then they still dream of 'theoretic' solutions, which are to be wholly 'independent' of practice.

§13. The full consideration of the problem involved in the initial 'acceptance of fact' by our knowing will have to be reserved for the essay on 'Making of Reality', which will have to examine the metaphysical conclusions to which the Pragmatic Method points. At present it must suffice to show (1) that the 'making of truth' is necessarily and *ipso facto* also a 'making of reality'; and (2) what precisely is the difficulty about accepting the making of truth as a *complete* making also of reality.

(1) (*a*) It is clear, in the first place, that if our beliefs, ideas, desires, wishes, etc., are really essential and integral features in actual knowing, and if knowing really transforms our experience, they must be treated as *real forces*, which cannot be ignored by philosophy.[8] They really alter reality, to an extent which is quite familiar to 'the practical man', but which, unfortunately, 'philosophers' do not yet seem to have quite adequately grasped, or to have 'reflected on' to any purpose. Without, however, going into endless detail about what ought to be quite obvious, let us merely affirm that the 'realities' of civilized life are the embodiments of the ideas and desires of civilized man, alike in their material and in their social aspects, and that our present inability wholly to subdue the material, in which we realize our ideas, is a singularly poor reason for denying the difference between the present condition of man's world and that of his miocene ancestors.

(*b*) Human ideals and purposes are real forces, even though they are not yet incorporated in institutions, and made palpable in the rearrangements of bodies. For they affect our actions, and our actions affect our world.

(*c*) Our knowledge of reality, at least, depends largely on the character of our interests, wishes, and acts. If it is true that the cognitive process must be started by subjective interest which determines the direction of its search, it is clear that unless we seek we shall not find, nor 'discover' realities we have not looked for. They will consequently be missing in our picture of the world, and will remain non-existent for us. To become real for us they (or cognate realities—for we do not always discover just what we went forth to find, as witness Saul and Columbus) must have become *real objects of interest* hypothetically; and as this making of 'objects of interest' is quite within our power, in a very real sense their 'discovery' is a 'making of reality'.[9] Thus, in general, the world as it now appears to us may be regarded as the reflexion of our interests in life: it is what we and our ancestors have, wisely or foolishly, sought and known to make of our life, under the limitations of our knowledge and our powers. And that, of course, is little enough as compared with our ideals, though a very great deal as compared with our starting-point. It is enough, at any rate, to justify the phrase 'the making of reality' as a consequence of the making of truth. And it is evident also that just in so far as the one is a consequence of the other, our remarks about the presupposition of an already made 'truth' will apply also to the presupposition of an already made 'reality'.

§14. The difficulty about conceiving this 'making of reality', which accompanies the 'making of truth', as more than 'subjective', and as affording us a real insight into the nature of the cosmic process, lies in the fact that it is complicated with the difficulty we have already recognized in trying to conceive the making of truth as a completely subjective process, which should yet be self-sufficient and fully explanatory of the nature of knowledge (§11). It is because the making of truth seemed to presuppose a certain 'acceptance of fact', which was indeed volitional *qua* the 'acceptance' and even optional, but left us with a surd *qua* the 'fact', that it seems impossible to claim complete objectivity for the making of reality, and that our knowing seems to many merely to select among pre-existing facts those which we are interested to 'discover'.

It is inevitable, moreover, that the pre-existing facts, which the making, both of truth and of reality, seems to presuppose as its condition, though, properly speaking, it only implies the pre-existence of 'primary reality' (§5), should be identified with the 'real world' of common-sense, in which we find ourselves, and which we do not seem to have made in any human sense. In other words, our theory of knowledge is confronted at this point with something which claims ontological validity, and is requested to turn itself into a metaphysic in order to deal with it.

This, of course, it may well refuse to do. It can insist on remaining what it originally was, and has so far professed to be, viz. a method of under-

standing the nature of our knowledge. And we shall not be entitled to censure it, however much we may regret its diffidence, and desire it to show its power also in coping with our final difficulties.

We ought, however, to be grateful, if it enables us to perceive from what the difficulty really arises. It arises from a conflict between pragmatic considerations, *both* of which are worthy of respect. For (1) the belief in the world theory of ordinary realism, in a 'real world' into which we are born, and which has existed 'independently' of us for aeons before that event, and so cannot possibly have been made by us or any man, has very high pragmatic warrant. It is a theory which holds together and explains our experience, and can be acted on with very great success. It is adequate for almost all our purposes. It works so well that it cannot be denied a very high degree of truth.[10]

(2) On the other hand, it is equally plain that we cannot deny the reality of our cognitive procedure and of the human contribution it imports into the making of reality. It, too, is a tried and tested truth. The two, therefore, must somehow be reconciled, even though in so doing we may have to reveal ultimate deficiencies in the common-sense view of the world.

The first question to be raised is which of the two pragmatically valuable truths should be taken as more ultimate.

The decision, evidently, must be in favour of the second. For the 'reality of the external world' is not an original datum of experience, and it is a *confusion* to identify it with the 'primary reality' we recognized in §5. It cannot claim the dubious 'independence' of the latter, just because it is something better and more valuable which has been 'made' out of it. For it is a pragmatic construction *within* primary reality, the product, in fact, of one of those processes of selection by which the chaos is ordered. The real external world is the pragmatically efficient part of our total experience, to which the inefficient parts such as dreams, fancies, illusions, after-images, etc., can, for most purposes, be referred. But though this construction suffices for most practical purposes, it fails to answer the question—how may 'reality' be distinguished from a consistent dream? And seeing that experience presents us with transitions from an apparently real (dream) world into one of superior reality, how can we know that this process may not be repeated, to the destruction of what now seems our 'real world'?[11]

We must distinguish, therefore, between two questions which have been confused—(1) 'Can the making of truth be conceived as a making also of "primary reality"?' and (2) 'Can it be conceived also as a making of the real "external world" of ordinary life?'—and be prepared to find that while the first formulates an impossible problem,[12] an answer to the second may prove feasible. In any case, however, it cannot be affirmed that our belief in the metaphysical reality of our external world, which it is in

some sense, or in no sense, possible to 'make', is of higher authority than our belief in the reality of our making of truth. The latter may pervade also forms of experience other than that which gets its pragmatic backbone from the former. Indeed, one cannot imagine desiring, purposing, and acting as ceasing to form part of our cognitive procedure, so long as 'finite' minds persist at all. All we can say, therefore, is that so long as, and in so far as, our experience is such as to be most conveniently organized by the conception of a pre-existing real world (in a relative sense), 'independent' of us, it will also be convenient to conceive it as having been to a large extent 'made' before *we* took a part in the process.[13]

Nevertheless, it is quite possible (1) that this 'pragmatic' recognition of the external world may not be final, because it does not serve our ultimate purposes; and (2) that the human process of making reality may be a valuable clue also to the making of the pragmatically real world, because even though it was not made by us, it was yet developed by processes closely analogous to our own procedure, which this latter enables us to understand. If so, we shall be able to combine the *real* 'making of reality' and the human 'making of reality' under the same conception. But both of these suggestions must be left to later essays to work out.[14] Before we embark upon such adventurous constructions, we must finally dispose of the metaphysical and religious pretensions of the Absolutism whose theory of knowledge has ended in such egregious failure.

NOTES

1. Cp. Essay xix. §10.
2. Cp. *Humanism*, pp. 192-3, and Essays viii. §11, ix. §4.
3. Cp. Essay viii. §12; and *Humanism*, pp. 198-203.
4. Cp. Essay ix. §5.
5. Cp. Dewey's *Logical Studies* for the experimental nature of predication, especially ch. vii.
6. Cp. p. 157 *note*, and Essay viii. §5.
7. Cp. 'Axioms as Postulates' in *Personal Idealism*.
8. Cp. Prof. Dewey's essay on 'Beliefs and Existences' in *The Influence of Darwin on Philosophy*, which makes this point very forcibly.
9. For the reason why we distinguish between these two cases at all, see Essay xix. §5.
10. Cp. Essay xx. §6.
11. Cp. Essay xx. §19-22.
12. Essay xix. §7.
13. Cp. *Riddles of the Sphinx*, chap. ix. §32.
14. Essays xix. and xx.

31

THE HUMANIST THEORY OF TRUTH

§1. Requirements of an Adequate Theory of Truth

Reflection on the traditional theories of Truth should have generated in us an adamantine conviction that any adequate account of truth must exhibit a number of features which are lacking to the theories we have criticised.

(1) It must not be merely formal, i.e. it must distinguish between the true and the false and suggest an applicable way of *testing* claims to truth.

(2) It must concern itself with human truth and its attainment by us, and must not put us off with 'criteria' that are inapplicable and 'ideals' that are unrealisable.

(3) It must not, therefore, take too strictly and too seriously terms like 'independent', 'transcendent', and 'absolute', which are better avoided in accounts of Truth. When, however, they are used, they should not be understood in any sense that would rule out the essential relation to man that renders truth valuable and worth winning. However anxious we may be to affirm the objectivity of truth, our craving must not lead us to leave

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Logic for Use: An Introduction to the Voluntarist Theory of Knowledge (London: G. Bell and Sons, 1929), pp. 145–174.

out the human side of knowledge. To do so simply stultifies a theory of knowledge and renders it irrelevant.

(4) We must take nothing for granted in our inquiry into truth, but must be willing to investigate even the most familiar of the conceptions and distinctions which are commonly assumed. This means that all the traditional rubrics by which we set our experiences in order are to be conceived as *arrived at*, as crystallising out of our cognitive processes, and as gradually establishing their claims to truth and value. Thus the distinctions between 'subject' and 'object', 'subjective' and 'objective', 'real', 'apparent', and 'unreal', 'fact' and 'fiction', in short, all claims to truth and reality, of whatever sort and to whatever degree, are to be taken as *in principle*, subject to inquiry, criticism, and revision.

(5) We must scrupulously keep in touch with actual human thinking, and must not repudiate or disavow it for the greater glory of some factitious logical or metaphysical 'ideal'. This means that we must be *psychological*, consistently and from the outset, and not merely as an afterthought when our 'logic' breaks down. In particular, we must *not* abstract from the *personal* side of knowing, as Formal Logic tried to do, nor ignore the purposive nature of its processes.

§2. 'True' and 'False' Antithetical but Correlative

Bearing these requirements in mind, let us next study our ordinary practice in awarding the epithets 'true' and 'false'. We shall find that they are both antithetical and correlative, implacably opposed and yet inseparably associated. The raw material of every inquiry contains true *and* false, and our business is to extract the true and to purify it until it is 'true enough' for our purposes, while discarding the false. Thus the process of extracting truth is like the refining of a metal extracted from its ores: there is nothing about it that justifies, or even suggests, the demand for any 'absolute' truth. Indeed, since the purity of any 'truth' and the degree of its immunity from 'error' is always relative to the tests to which it has been subjected, it would seem, even at this stage, that there was really no *meaning* to be given to this demand.

Thus in human thinking every inquiry is inspired by the desire for 'truth' and the dislike of ignorance. But because we know that the true and the false are commingled in our data, our whole search of truth is dominated by the need of escaping from 'error'. And by error we mean whatever frustrates our search. 'Falsity' is failure, 'truth' the success of our enterprise, not vaguely in the abstract, but in the sense of solving the particular problem before us.

'True' and 'false', then, are definable in terms of the purpose of the

inquiry. Whatever is found to thwart or defeat this purpose is called 'false', whatever is taken to forward it and to lead it to a satisfactory and successful conclusion is voted 'true'. This is the primary use of the antithetical terms 'true' and 'false', and it is evident that at various stages of the inquiry the same factors of the situation may be valued variously. What we began by judging 'true' may come to seem more and more infected with falsity; what seemed obviously 'false' may be shown to have been a hiding-place for important 'truths'; and when we look back upon a completed inquiry, we may see that we could never have succeeded in it, if we had not been willing to subject our material to continuous and gradual purification and been pertinacious in questioning both self-assertive 'truth' and blushing unobtrusive 'error'.

§3. 'True' and 'False' as Valuations

In the above sketch 'true' and 'false' have clearly been described as *valuations*, as expressions of the approval or disapproval bestowed upon some cognitive operation. They are, indeed, the characteristic valuations, positive and negative, which arise in, and are appropriate to, cognitive process or inquiry as such. If we are willing to take them thus simply to begin with, we shall readily understand not only the apparently paradoxical relations in which they stand to each other, but also the complications which arise from their further use. The nature of 'true' and 'false' as valuations sufficiently explains their correlation. Values always hunt in couples, and imply a tacit reference to their opposites. And they always involve a relation to a valuer: for they are constituted by *his* judgments of approbation or disapprobation. In these respects the true-and-false is perfectly analogous to the pleasant-and-unpleasant, the right-and-wrong, the good-and-evil, the beautiful-and-ugly, and, perhaps we may add, the real-and-unreal. They are all forms or kinds of the good-and-bad which designates relation to a purpose, 'end', or 'good'. Regarded thus, 'truth' is simply the good or end aimed at in knowing; 'error' its 'bad', defeat, or failure. The doctrine is as old as Aristotle,[1] the most commentated of philosophers; that it has never been understood simply shows that the understanding of a great philosopher demands something more than the intelligence of a commentator.

We should realise, then, that knowing is always accompanied by valuing. Or, rather, that it *is* valuing. For values are the end of knowing and the desire for them is the beginning, while valuing is an integral part, of every cognitive act. At every step in our knowing we are weighing the alternatives presented to us, and judging them good or bad as means to our end: the question we should ever bear in mind is, *Is S P or P'? Is it better*

taken as P or as P'? In short, knowing is essentially a purposive process directed towards an end which the knower conceives as desirable, and desires. He judges the various stages of his progress, as it proceeds, as good or bad, true or false, according as they seem to him to be approaching his end or carrying him away from it. It is not necessary, of course, that his judgments should all be infallible and irrevocable, nor that the complications introduced into the proceedings by conflicts of ends in his soul or by divergences between his valuations and those of others should be considered at this stage. These complications must have been overcome and a working compromise between conflicting claims must have been reached, before we can get at fully recognised 'objective' truth; but for the present it will be more instructive to follow the course of individual knowing.

§4. Valuation a Continuous Process

Valuation is a life-long process. It goes on continuously. Every moment of life is felt to have its value, of one sort or another, positive or negative, and its valuation is an unceasing occupation of every mind. This is true also of the cognitive valuation in terms of 'true' and 'false'. It may start anywhere, and about any object at any time, and need never stop till the desire to know is exhausted. And that need never be.

We should expect, however, any particular valuation to undergo the giddiest variations and vicissitudes in the course of its career. What is called true to-day may be falsified to-morrow; what was 'true' yesterday may be 'false' to-day. So the *date* of a 'truth' is by no means always irrelevant, and the only truths that can plausibly claim to be 'eternal' are those which have been put out of relation to time, by abstraction, to begin with, like the truths of mathematics, nor will even this ensure their acceptance through all time. Similarly, the use of timeless formulas, like 'laws' or 'universals' for guiding anticipation, is legitimate only while we bear in mind that in their application the blank spaces in our formulas must always be filled in by specifying the conditions and values of the particular case: it becomes a sinister superstition when we take it as revealing a changeless constitution of the real.

Abstraction from the *place* of a truth can no more be taken for granted than abstraction from its *time*: indeed, *what* is true will often be found to depend on *where* it is required to be true. What is true in one place may be false in another. And that not merely in matters of manners and customs. So simple a question as, *What is the time*? cannot be answered without regard to the place where it is asked. If it is true that *it is two o'clock* in Oxford, it will certainly be false in New York. And one of the most valuable lessons of Relativity is to have impressed on us that *all* the 'times' are true

together in different places, because time is *essentially local*, and we ought to think in terms of space-time, which is really one and is divided only by abstraction.

This principle is itself only a case, which happens to interest physics, of a wider philosophic principle, which we may now go on to state. *Every truth is essentially relative to the conditions out of which it sprang and to which it was meant to refer*. So when these conditions change, we must always be willing to revise it and to adapt it to the changed conditions, and when we apply it to *other* conditions we are *making an experiment and taking a risk*, and should not assume a priori that it continues to hold. It serves to guide expectation, but its 'coming true' is a real 'verification' which adds to its usefulness and value.

§5. The Relativity of Truths

Again, therefore, it would seem that the notion of an 'absolute' truth is meaningless. Truths are relative to the state of knowledge which they formulate, and to take them otherwise is to delude oneself. Exemplifications of this may be drawn from every department of knowledge. A few will probably suffice to illustrate this point.

As a boy I learnt that Mt. St Elias, in Alaska, was 19,500 feet high. Years afterwards a new observation knocked it down to 14,500 feet. Then some one went up it 14,000 feet, and said he was nowhere near the top. Of late it has kept pretty steady at 18,000 feet in the geography books. Similarly, the Matterhorn appeared to have grown 21 metres—from 4484 to 4505 metres between my second and my third visit to Zermatt—though I could not discover whether natural expansion or the influence of the hotel-keepers had raised it above the 4500-metre line. But these, it will be said, are all variations in our knowledge. The real height of the mountain itself, which it is the aim of our truth to express, has been the same all along, and has not changed.

Such ways of speaking are of course convenient, and seem sound enough until we ask what 'the real height' means and how it is ascertained. We then discover that it cannot be taken as unchanging, and that the-real-height-*for-us* must vary with our means of determining it. The actual top of a snow mountain varies from day to day; there is now more snow on the top, now less, rocks tumble down, the earth is unstable and the range of which it forms part may be rising or sinking. What, then, is meant by its 'real height'? No wonder one may read in Whymper[2] that "the summit of the Dent Blanche is a ridge, perhaps 100 yards in length. The highest point is *usually* at its north-east end."

'The real height' gets into further difficulties when we consider how the height-for-us is determined. It is obtained by taking observations with instruments. But no human instrument will measure with absolute accuracy, nor is any human observer capable of it. If, therefore, a trustworthy value for the height is desired, the thing to do is to take a long series of observations (probably all different) and then to take their average, throwing out first any observation which for any reason is considered bad. The assumption is, of course, that over-estimates and under-estimates will occur about equally often and will cancel out. But can an average possibly be 'the real height' which varies not? The very next observation may upset it. In scientific measurement it is further customary to estimate the 'probable error' of the value adopted, and then 'the real height' will appear as something like '18,500 ± 25 feet', which looks still less like a fact in nature than an average.

Finally, the accuracy of a measurement is not only relative to that of the observer and of his instruments but also to his purpose. No one wants to know the height of a mountain to a millimetre, nor would even the most accurate historian think it possible to discover the exact minute in 1066 when William the Conqueror first set foot in England.

It is enough, then, for Science to get approximate values which can be improved on, if needed and desired, to any requisite extent. 'Absolute' truth means nothing to it; or rather, if it is taken etymologically and literally, it means a patent absurdity, a negation which claims to be 'freed from' all relations, and especially from the vital relation to scientific purposes which creates the value of a truth. A scientific 'truth', therefore, is always a value, and is always capable of being superseded by a better value. Moreover, even a slight improvement may supersede an old value and render it false. Thus, if 'the' distance of the earth from the sun has been taken as 92,000,000 miles, and if what the astronomers consider a better observation reduces it to 91,430,000 miles, the new value is substituted in the textbooks; yet, for many purposes, 92 (or even 90) million miles may continue to be quite 'true enough'.

Hence it follows that the more progressive a science is the oftener it changes its 'truths', and the shorter is the life of any one 'truth'. Immutability and immemorial antiquity are only found in the 'truths' of pseudo-sciences, or of sciences like arithmetic and theology, which adopt the policy of avoiding the verbal confession of the changes in the meaning of their terms which their progress entails.

§6. Discovery Presupposes Interest

Being purposive and relative to purpose the search for truth presupposes interest. Truth is not forced upon us; it has to be looked for, and often long and strenuously. Psychologically almost any interest may start an inquiry and lead to a discovery of truth. Hence discoveries are never the chance affairs they sometimes seem to be, even if a streak of luck attends their birth. Röntgen was clumsy and lucky enough to put his fingers over part of the vacuum tube he was photographing, but he had the sense to recognise his fingers in the resulting marks on the plate, and to understand that they must be transparent to the rays with which he was experimenting. An Oxford physicist, Jervis-Smith, who actually made the same experiment before Röntgen, did not discover the Röntgen rays because he was less clumsy, and so did not understand the much smaller finger print left on *his* plate. That was Röntgen's luck; but he made the discovery, not because he was lucky but because he was a good physicist, interested in vacuum tubes and able to handle them intelligently.

We may say, then, that it is always from psychological interest and in the pursuit of some purpose that truths are born. They satisfy an interest and fulfil a purpose. But interests vary and purposes change; so our truths do not always satisfy the purpose we started with in the way we wanted. There is an element of unexpectedness, as well as of luck, about many discoveries. Saul went forth to find his father's asses and founded a kingdom. But only because he changed his mind, and desisted from the pursuit of the asses. Columbus started for India, and got to America. But when he got there he felt he had not sailed in vain, and accepted the Western hemisphere instead of the Orient he had sought.

§7 Humanist Definitions of Truth: (1) as Logical Value

All the characteristics of truth we have been considering in §§3-6—its dependence on valuation, its progressiveness, its relativity to the occasion of its use, to the state of knowledge, to the purpose and interest of the knower—are completely ignored by the intellectualist descriptions of knowing which are in vogue. Yet they are far more vital than the definitions we considered in Chapter VII.

It must not, however, be supposed that the Humanist account of Truth is incapable of producing definitions. In point of fact it can provide no less than four definitions or quasi-definitions from different points of view. We can define truth—(1) formally as *logical value*; (2) psychologically, as *satisfaction of a cognitive purpose*; (3) materially, as *a truth-claim that works* and is

useful; (4) empirically, as *dependent on the consequences* of taking it as true. As all of these phrases, however, have often been misunderstood or misconstrued they will all need elucidation.

(1) The first of these, indeed, should not need much further discussion after what was said about the relation of logical to the other values in Chapter III and Chapter VIII, §3. We need only note here the formal character of this definition and the advantages of classifying truth with the other values. To conceive truth as logical value is *formal*, because it does not exclude the possibility that the 'truth' claimed may be false and its value *negative*; so that, strictly speaking, truth-and-falsity is the sort of value which concerns logic. We can also say that logic considers its values as primarily *value-claims*, and proceeds to evaluate them, and so to discriminate the 'really true' from the false pretenders. Secondly, the advantages of classifying truth with the other values in the same genus with the ethical, aesthetical, and pleasure-pain values are manifold. It explains (*a*) the curious vicariousness of the terms of valuation in language. A (logical) proof is not only called 'true', but 'good', 'elegant', and even 'beautiful'. Every schoolboy knows that he may get a sum 'right' or 'wrong'. Conversely, logical terms are transferred to ethical and aesthetical contexts. A statue, to be 'beautiful', must have the 'true' proportions. A 'false' friend is one who does not wish your 'good', etc. (*b*) By conceiving truth as a value we implicitly raise the question 'positive or negative?', and indicate the need for distinguishing the 'really true' from what only claims and seems to be true. We can then effect the discrimination by the test of superior value for our purposes. The *truer* is the *better*, and, when the worse alternatives have been discarded, may be called 'true'. (*c*) We can correlate the several sciences of value, and bridge the gap between them and the sciences of fact. For if the recognition of 'fact' proceeds from an evaluation, as was shown in Chapter III, §3, a fact is a hidden value. The 'real fact' is extracted from a mass of apparent facts. How? By displaying superior value. The 'real fact' is *better value*. (d) When truth is recognised as a value we grow readier to observe the frequent contamination of logical with ethical and aesthetical values, and to allow that there is no inherent impropriety in a process which naturally results from the unity of the valuing personality. Thus there opens out to logic a new and fascinating study of the interplay of the various values in what are predominantly 'cognitive' operations, and logic need no longer hesitate to admit that their course is often directed by feeling to a happy ending'.[3] (e) Lastly, the sway of value can be extended over our whole experience. If 'true' is, like 'good', 'beautiful', and 'pleasant', a value, and if all the values are relative to one supreme purpose, 'The Good', we have, in theory at least, taken an important step towards the realisation of the Platonic ideal of a Reality that subordinates itself to the Good.

In principle, then, truth can no longer be unrelated to good. It is a peculiar and specific form of good. But this is no objection, as F. H. Bradley mistakenly supposes.[4] We may make it as specific as we please, so long as we do not overlook the connexion, hitherto ignored, between the True and the Good. However much it may annoy the intellectualist to find that in point of fact moral and logical values are interchangeable and that the various values work together, these processes must be studied; indeed, protests against their undue contamination are most likely to obtain a hearing if they start from an admission that the true and the good are at any rate commensurable as values.

In conclusion we may sum up this value aspect of Truth by saying that *the true is always good to believe*, and that at any given time it is what it is *best* to believe.

§8. (II) Truth as Satisfaction of a Purpose or Need

By defining it thus we at once connect 'truth' vitally with 'life'. So long as we cling to this definition truth cannot be dehumanised, and the paradise of science cannot be desiccated and devastated by the demons of pedantry. If only our schools would teach the truths that truth is desirable and satisfies, and that knowledge is power, they might kindle much intellectual ardour they at present chill by the intellectualist untruth that the more useless a 'truth' grows the 'higher' it is.

The dependence of every inquiry, of every form of cognitive enterprise, on purpose and on the satisfactions which accrue from the attainment of truth, is too obvious to be directly denied once they are pointed out. But the intellectualist tries to minimise their effect. (*a*) He insists on the "peculiarity" of cognitive purposes; (*b*) he denies that truth, though it depends on purpose for its genesis, remains so dependent "in its essence."

To (*a*) the reply is that cognitive purposes remain human, and cannot be dissevered from the rest of our activities. Nor can our life and nature be divided into a 'theoretic' and a 'practical' half. Processes which are not usually *called* cognitive precede, pervade, and clinch every cognitive activity. Thus every inquiry starts with a question; every judgment is the answer to a question. This is the great discovery (or re-discovery) which modern logic owes to John Dewey and Alfred Sidgwick, though it may lurk also in the *dictum* of Protagoras that about every matter there were two arguments (*λόγοι*).

Even, therefore, if in theory a rigid line could be drawn between the theoretic and the practical, we should in practice find that 'practical' considerations conditioned our theories of the 'theoretical' throughout. When

it is studied without prejudice the human intellect is found to point to practice as the magnet points to the pole: when it *fails* to do so, we may be sure that it has become deranged. Moreover, the intellectualist's descriptions of a 'purely theoretic' intellect unconsciously attest this. It has to be represented as 'divine', because it plainly cannot be human. For example, Plato's Ideas cannot know the individual,[5] and cannot live with the sensible: he has, therefore, to sky them 'somewhere out of space'. Similarly, Aristotle's 'God' is too perfect to contemplate an imperfect world: but is not this an indirect way of admitting that an intellect able to deal with the infinitely various individualities of our 'contingent' world must be built on other lines?[6]

(b) It is subtler to argue that Truth may be intrinsically independent of man, 'in its essence', though for us it must depend on an interest to attain it. But this contention will hardly bear examination. (1) It uses the vague word 'essence', which has long ago departed from its original antithesis to 'accidents', and come to mean merely 'the important part'. And what part of truth is *not* important? Surely, for us at least, its relation to man is the most important part. Moreover, if any part of the concrete cognitive process could be independent of the whole of which it is part, how could it be a part at all? An 'independent' part of a whole seems a covert contradiction. (2) It involves a queer use of 'independent', which we have found to be a tricky word, in Chap. VII, §11. Here it is used to dissever a product from the process which alone produces it; but can the terminal point of a line be called independent of the line on which it lies? It is true that sometimes when we have arrived at a conclusion we can see that it might have been reached by other, and possibly better, ways; but in the case of truth this suggestion is meaningless. For there is no other way to attain it but by human effort. (3) The whole policy of treating the 'essence' of Truth as 'independent' of its origin is surely discredited by two dozen centuries of failure. (4) The doctrine in question would seem to lead to some curious consequences. If there can be truth independent of us, there can be unknowable truth. For our inability to grasp it will not detract from its truth. Mr. Bertrand Russell has seen this, and boldly gives an example: "All the multiplication sums that never have been, nor ever will be *thought of* by any one, deal with numbers above 1000."[7] His illustration fails by reason of the ambiguity in "thought of." In one sense every arithmetical result has been thought of, in laying down the law or rule for its production. It has not been *worked out*, but it can be whenever an occasion arises. Moreover, if *some* truth can properly be called unknowable, why not *all*? In its anxiety to avoid humanism intellectualism plunges into scepticism.[8]

§9. (III) Truth as 'Working'

It must be admitted, nay, emphasised, that to say that *all truth must work* and *be useful* is not, strictly, to define it at all. It is to insist on a very important and vital requirement which has been unfortunately overlooked; but it has not the *form* of a definition. It does *not* make 'truth' *convertible with* 'what works', nor *identify* it with 'usefulness', though from the earliest days this false conversion has been falsely foisted upon Pragmatism. The blunder in formal logic which it involves must be debited to its critics, who have never been able to quote from a representative pragmatist any passage which committed it, though it is common in popular and hostile expositions.[9]

It is improbable, moreover, that the charge of 'converting simply' *all truth is useful* into 'anything useful is true' would ever have been brought, if the early critics of Pragmatism had had the vaguest notion of its meaning. For they would then have understood how very complicated were the relations of truth to 'use' and 'working', and how many interesting and important questions and disputes would arise so soon as an attempt was made to determine what sort of 'use' and of 'working' was to be deemed relevant to the 'truth' of a doctrine. The pragmatists, though it can hardly be maintained that they fully realised all the complications and developments from the outset, suspected many of them, and from the first adopted a classification of truth-claims which excluded the identity of 'truth' and 'working'. So they carefully refrained from defining 'the true' as 'the useful'.

§10. 'Use' and 'Working' as Corollaries

In point of fact the usefulness and efficacy of Truth are merely corollaries from the recognition of personal meaning. For once we admit that every truth must arise from a search for truth, in a context of personal endeavour, it must be related to the purposes of the truth-seeker and seem valuable and useful to him. So soon as we drop the abstraction from the personal context of the actual judgment which Formal Logic makes, we make it clear that meaning depends on application; and application is simply *logical use*. All truth, therefore, must have a use, because it must have a meaning.

Moreover, it is plain that all truth-seeking tries to verify a truth-claim, to answer a question of interest, to satisfy a purpose, to attain an end desired. So whatever is accepted or propounded as true must *have been* useful. I.e. it must have seemed relevant to an interest and valuable as an answer to a question or as an instrument or means to an end. It must have fulfilled its immediate purpose. Else it would not have been what was

wanted, and would not have been called 'true', because it would not have worked for the purpose in hand.

Thus use is, quite literally, the *ratio essendi* of truth. No truth can come into being, no truth can be asserted, unless it has been judged useful for some purpose. This use *precedes* its publication, and is unaffected by whatever may befall it later. It may be received with universal applause—a fate which befalls a newborn truth only by a miracle—or it may fail to find acceptance and its maker may, upon reflection, himself withdraw it; all this is irrelevant to its genesis, and belongs to the chapter of the revision and revaluation of truths in being.

It should be noted, lastly, that, with this explanation, the usefulness of all truth becomes a sort of truism. It gets its meaning and importance only from its denial of the Formal view of truth and the fact that so many logicians have not yet discovered its emptiness.

§11. The Meaning of 'Useful'

But when it is urged that the salutary doctrine of the usefulness of truth is really indisputable, care should be taken to interpret 'useful' rightly. It should be taken in its fullest and widest sense. 'Useful' means a means to an end. Psychologically, *any end will do*: it need not be a material good or a pleasure or a matter of dollars and cents, although these ends have often entered into the pursuit of truth, for good as well as for evil. In this strict sense of 'useful', Plato's *Republic* was the most 'utilitarian' scheme of life ever propounded. For in it every act of every citizen was to be a means to the supreme end, 'the Good'.

Secondly, the relation which makes a thing 'useful' should be taken as strictly a relation to its own, the relevant, end. We should not, therefore, call a book good because it was a good narcotic; for that is not the purpose with which books are written.

Lastly, we should not fail to notice that what is useful for one purpose need not remain so when we go on to the next. And as purposes continually change and develop, the usefulness of truth supplies a further impetus for the progressive changes in our truth-valuations. Similarly, the falling out of use of truths no longer actually required sufficiently accounts for most of the belief in 'useless' truths, which it is the aim of the dictum, *all truth is useful*, to dispel.

§12. 'Truths' One Sort of Truth-Claim

It was stated in §9 that Humanism was never tempted to convert '*the true is useful*' into the '*the useful is the true*', because it was always keenly aware that truth-claims are not necessarily true. It therefore recognised the need for discriminating the different sorts of truth-claim, and determining their relations to the sort which is generally called 'truths' (or verified truth-claims). In particular it was admitted, and even emphasised, that all sorts of truth-claim were capable of affecting cognitive operations, and of playing an important part in knowing, without on that account ranking as 'truths'. Thus it was shown, in *Axioms as Postulates*, that the so-called a priori 'axioms' were really 'postulates', and so far from being absolutely proved, or 'necessarily true', were not true at all until they had received an adequate amount of verification.

Now this means, of course, that 'true' and 'useful' are *not* convertible terms. The truth-claims which are not truths may be 'useful' but they are not 'true'. They are, however, relevant, and even essential, to the establishment of truth. Indeed, they are so important that the nature of truth can be properly understood only by mapping out the whole region of truth-claim, and so placing truth in its proper setting. This is accordingly our next task.

§13. The Realm of Truth-Claim: (1) Postulates

A classification of truth-claims should distinguish, *at least*, between truths, errors, fictions, lies, methodological assumptions, methodological fictions, postulates, axioms, and jokes. It should trace their genesis, and their relations to one another. It should note first of all that all these structures are rooted in the 'subjective' side of the cognitive process. The realm of Truth-claim is a realm of *claims* and implies *claimants*. Moreover, all its structures are *purposive* and involve a truth-claim of sorts, and disastrous consequences may ensue if the particular truth-claim is misconstrued. For example, if a 'joke' is not recognised as such and is taken seriously.

(1) Psychologically speaking, the *postulate* may be regarded as the most primordial form of truth-claim. For in it the truth-seeking impulse finds its clearest expression. To postulate means to be willing (or anxious) to believe something 'desirable if true', and to try to establish its truth. Postulation differs from mere credulity or 'animal faith' in its willingness *to learn from experience*. For postulates are truth-claims which may be defeated, withdrawn, and modified, as well as verified. What decides on the value of a postulate, and in the long run on its fate, is the manner and extent of its *working*. Thus the notion of 'working' embodies the '*objective*' factor in the process—the reply of nature to our demands.

§14. (2) 'Axioms'

As our questions are often inept, our presumptions presumptuous, and our postulates foolish, the way from the 'postulate' to the '*axiom*' is commonly long and arduous, and many drop out by the roadside. But in idea at least the distinction between the two is not difficult. An 'axiom' should be conceived as a fully verified postulate which serves as a principle for a fully established science. When a postulate reaches this stage its logical character has really been transformed. It is no longer a merely human demand upon nature. It no longer depends on our desire to uphold it, but rests securely on the solid mass of scientific fact it has been instrumental in eliciting. So it can defy its critics by blandly requesting them to provide a substitute that will account for the facts in other and better ways.

But, of course, in actual fact such assured and acknowledged axioms are rare. They are much rarer than they were supposed to be, and are getting rarer the more inquiry is made into the first principles of the sciences and the more attention is paid to alternative ways of comprehending the facts. There is in consequence a tendency to take hypothetically and provisionally even such 'axioms' as are retained; and, as this change of attitude towards them does not involve a change in their verbal formulation, it relaxes the meaning of 'axiom' in the older theory of knowledge as well as in the stricter definition given above. This laxity is both unfortunate and unnecessary, because the drift of the modern tendency can be more clearly and better expressed by using the terms 'methodological assumption' and 'methodological fiction'.

§15. (3) Methodological Assumptions

Methodological assumptions are really forced upon the would-be knower by the feeling of his helplessness when he first encounters the vast flux of happenings. He does not know what to attend to, what to disregard, what to select as significant, how to break up ('analyse') the overwhelming torrent. He simply *must* somehow find some clue to guide him through the labyrinth.

Consequently he is willing to adopt any principle, hypothesis, or suggestion that promises to serve as a guide, and to be of use in analysing the flux. A 'methodological assumption' is such a principle. It is a judgment which is useful, or even needful (*faute de mieux*), but which nevertheless is not trusted beyond the tested sphere of its application. It is not necessary that in using it we should be convinced of its ultimate truth. It is not necessary that it should turn out to be ultimately true. It is enough that we should be able to work with it, that it should serve our immediate purpose, that it

should guide observations and suggest experiments. If it can do this, we shall hardly be distressed even to discover that in the end it must be false.

As a matter of fact the fundamental principles of all the sciences are, under modern scrutiny, more and more turning out to be not 'axioms' but methodological assumptions. That is, they are essentially methods of working in the subjects to which they refer. The same fate is overtaking many of the traditional principles of philosophy. For example, the real function of the principle of Causation is plainly methodological. It is simply a general instruction to an inquirer who has picked out of the flow of events some interesting bit or aspect of the 'phenomenon' he wishes to investigate, to look for some anterior bit or aspect, so related to it as to be called its 'cause', i.e. such that he can predict and control his chosen 'effect' by manipulating it. He thereupon declares the second selection from the flux the 'cause' of the first, and flatters himself that he has extracted a guarantee from the course of events, because 'the effect must follow its cause' and 'the cause must produce its effect'.

§16. (4) Methodological Fictions

But as this case (with many others) shows, the methodological assumption is very often a *methodological fiction*. We may be well aware when we make our assumptions that they are not true, and indeed cannot be completely true, because they have been reached by artificial simplifications which facilitate calculation but leave out certain factors in the actual situation. What explains and justifies this procedure will then be that the falsity of our working assumption may be irrelevant for our purpose, and need not vitiate our result, which may be true or good *enough*. Also a methodological principle may work well and be useful up to a point, and then break down: in this case we are apt to consider it a 'useful fiction', and to go on using it up to that point. The difference, then, between a methodological fiction and a methodological assumption will be that the former is known to have limits to its working, its usefulness, and its truth: in the case of the latter such limits either do not exist or are not known. The methodological assumption thus represents that stage in the establishment of a principle in which its usefulness is manifest, but it is either not yet certain, or not relevant, whether it is ultimately true or false, and whether it will develop into an 'axiom' or turn out to have been a 'fiction'.

In any case methodological fictions are exceedingly common in the sciences, as Prof. Vaihinger has shown in his monumental *Philosophy of the As If*. Thus the whole of *applied* mathematics depends on our feigning the objects and processes dealt with to be identifiable with the ideal objects

and processes of *pure* mathematics. They never are so quite, and our assumption is known to be false. But if an appropriate selection has been made from pure mathematics our fiction comes near enough to the actual course of events to be extremely useful, and, indeed, indispensable. Thus, when a surveyor maps a country he has to treat his base line as an Euclidean straight line, although he knows it is a segment of the circumference of an earth which is (roughly) spherical. In consequence of this necessary falsification his results *cannot* be right, and in the end he has always to 'fake' them more or less to make his map, which is a fiction also, because on no system of projection can the actual relations of the earth's surface be represented accurately on a plane surface.

So the scientific importance of fictions is indisputable, even if we do not go on to contend that the 'ideal' conceptions of pure mathematics, and indeed all 'ideals', are fictions, and that all identification involves fiction, because it feigns the non-existence of the differences which always exist between two cases of 'the same'.

§17. (5) Fiction

But, after all, methodological fictions are only a special case of the use of *fiction* generally, and the creation of fiction is a logical topic inferior in importance only to the making of truth. It rests, in ultimate analysis, on our power of *feigning* that to be which we know *not* to be truly real, on our *pretending* and acting *as if* it were. This power is displayed not only in self-deception and make-believe, but in every game and every form of play, and in all the works of the 'imagination'.

Now it is fairly evident that fiction always involves a sort of truth-claim. Not only are the terms true and false freely applied to 'works of the imagination' and of art and to 'works of fiction', but judgments about them may be as literally true and false as judgments in any other 'universe of diction'. Whoever judged that Helen eloped with Hector, or that the Centaurs were hippocephalic anthropoids, or that Romulus and Remus were suckled by a goat (like Zeus), would be judging *falsely*. Moreover, misconceptions about the fictional character of an object of thought may be very serious affairs: they may mean failure to distinguish between jest and earnest and fatal confusion about the sort of reality claimed by the various subjects of discourse.

§18. (6) Jokes

Still more troublesome than the fiction to a serious-minded logician (who frequently apprehends it as a 'lie') is the *joke*. For he here encounters an irreducible incongruity between the verbal truth-claim and the real meaning. The joke does *not* 'mean what it *says*' (Chap. I, §10; Chap. IV, §12), and may mean the very opposite. If it is taken to mean what it says, it is sure to be misunderstood and to lead to further misunderstandings; if it is to be understood, the first thing to do is to discount its formal truth-claim. After that its real meaning may be gathered from a great variety of sources, varying with the particular joke. The context, the situation, the character of the parties concerned, the sounds of the words used and their similarities to others, lurking allusions to anything in heaven and earth, in literature or in common knowledge, etc., all may have to be considered. But as on principle and by training the Formal logician is wont to abstract from such things and to concentrate upon the formal truth-claim, it hardly seems possible that a Formal logician should as such understand joke and the truth-claim it makes, which is itself often the best part of the joke! His only consolations are that jokes do not often occur in the logic books and that few would have the face to try a joke upon a Formal logician.

§19. (7) Lies

On the other hand no such difficulty besets the analysis of the truth-claim of the *Lie*, and the failure of Formal Logic to consider it is very remarkable. It must be ascribed to other reasons. It is most probably due to intellectualist dislike of what is *not* a purely intellectual entity, not a creation of 'pure thought', and plainly involves a reference to 'will'. For the difference between the lie and the error lies in the *intention* of the liar. Lying is voluntary, erring involuntary. The liar *knows* that the truth-claim he makes is false; he means to propound an *un*-truth, an *intentional* falsehood. He is not deceived, like the man who is in error, but is himself trying to deceive. He is not in error himself, but, if he is believed, he is producing error in others. In short, for theory and for practice alike, the lie and the error appear to be very different.

But it would be upsetting to intellectualism to have to recognise *intentions*. So it tries to reduce the lie to the error and to ignore the distinction between intentional and unintentional falsity. This tendency comes out well in the vocabulary of a naturally intellectualist people like the Greeks. The same word 'pseudos' has to do duty for both: it embraces *anything false*, without regard to the circumstances under which the false statement was

made or to the state of mind of the man who made it. Most other civilised languages have found it expedient to distinguish the lie from the error, and the *lacuna* in Greek can hardly be ascribed to the fact that the Greeks were unacquainted with lying; for it was an art which they admired and in which they excelled. It is to be connected rather with the general defectiveness of their vocabulary in words for willing and all that is connected with it, which has done much more than is usually suspected to produce the intellectualist bias of the philosophies descended from the Greek.

It must not, however, be supposed that there is *no* likeness between the lie and the error. They both advance *false* truth-claims, and they are both *failures*. In this they resemble the joke. The truth-claim of a joke, if understood literally, may often seem false, and the question, 'Are you lying or joking?' may often be the real issue. But whereas a joke is a failure if its truth-claim is taken seriously, a lie fails if it is *not* so taken.

What distinguishes the lie from the error is that some one, to wit the liar, already knows that its truth-claim is false. In the case of the error this need not be so. For though strictly a false truth-claim can only be called an 'error' *after* it has been detected, there may be a time when it deceives every one, and is accepted by all as a 'truth', whereas a lie does not ordinarily deceive its maker.

In analysing both the lie and the error, however, it is vital to distinguish the persons concerned, and simply impossible to abstract from personality as Formal Logic tried to do. For the truth-claim of the lie looks very different to its maker and its victim. The victim accepts it as true, until he finds it out. The liar knows that its 'truth' will last no longer; he never took it as true and knew all along what was the true nature of its claim. Consequently he could not use it to claim truth withal *for himself*, however well it served his other purposes. He alone, from the first, knew what it is, viz. the purest example of a man-made 'truth' (claim), and 'all his own invention'. But knowing also that, if detected, it ceases to work, he cannot but regard it with a certain apprehension. It may at any time be found out, and will then probably defeat his purpose, although of course it is also possible that by then it will (like war-propaganda) have served its purpose and done its work. In general, however, the truth-claim of a *detected* lie disappears, and the making of it recoils upon the liar.

On the other hand, an undetected lie is completely successful and continues to pass for true. As no one has detected it, no one is entitled to call it a lie. Suppose I circulate a tale which no one can confute, say that Humanism was revealed to me in a dream by Protagoras himself, and then die without confessing. If it is important enough my 'lie' goes down as truth to history, and is taught as such to all the little boys and girls in the whole civilised world. We may suspect that history is full of such lies

passing as truths: but *ex hypothesi* we cannot say which they are. Still in idea the line between a truth and a lie is clear, however hard it may be to draw in practice. Nor does the lie contravene the principle that the formal claim to truth which every judgment makes is accepted while it works.

§20. (8) 'Truths' and Their Verification

The subject of *Error* is important and intricate enough to be reserved for a later chapter (IX), but about the genesis of *truths* in the proper sense, i.e. of *verified truth-claims*, something further may fitly be said. It is first to be noted that the process of verification[10] is identical with that of logical 'working', in the sense of our definition (§9), and that it is a process to which no final term need be set. The verifying of a claim to truth by its working may go on for ever, and usually does. Inasmuch as a truth-claim may be false, every 'truth' that is enunciated has to be tested. It has, indeed, been tested already more or less, in its maker's mind, before it was published, as we saw in Chap. VI, §9. But this does not exempt it from further testing. For it has to maintain its claim to be the most valuable, best, and therefore truest, judgment possible under the circumstances of its birth, not only in the eyes of its maker, but also in the opinion of every one else who is, or thinks he is, a judge of its truth-claim. Moreover, it has to uphold its claim and to preserve its 'identity' in the face of possible improvements. When these amount to what is judged to be practically 'another' judgment, it will suffer rejection, and will be revalued as 'false'; and in a progressive science this fate is sure, sooner or later, to overtake it.

Thus, suppose the question concerns what is called 'the' distance of the earth from the sun, and that on the strength of observations of the kind described in §5, 'the' distance (a manifest 'fiction') is taken at 95,000,000 miles. As the result of subsequent observations, however, better values become available. 'The' distance of the earth from the sun may successively become 92,000,000 miles and 91,430,000 miles, and each earlier value may become 'false', merely because a truer value can be stated, even though the improvement may be quite slight and even imperceptible by the methods used at first. In such cases the old 'false' value may continue to be used in rough calculations as being 'true enough'.

It is plain, however, that this continual shedding of superseded truths is no ground for scepticism; it is merely an incident in the unending growth of knowledge. Every truth has its day, like every dog; but sufficient for the day is the truth thereof.

Thus these cases of truth-claims that are not truths but lies, fictions, methodological assumptions, postulates, etc., entirely preclude the simple

conversion of *all truths are useful*. Nor, of course, can truth be defined as 'what works', seeing that all these other truth-claims 'work' in various ways; we may, however, say it is 'what (at any time) works *best*'. This has the advantage of introducing a reference to values, choices, and the progress of knowledge.

§21. The 'Working' of Truths

One final obscurity, however, remains in the relation between truth and 'working'. What precisely is meant by this vague term? Does *any* sort of working, however alien to the ordinary type of cognitive operation, suffice to constitute a 'truth'? If a powerful State or Church sets itself to persecute an opinion, say about evolution, and succeeds in suppressing it by force, does it render it 'false' by killing all who believe it? Does humanism cease to be true because a powerful ring of philosophy professors have found it unanswerable and agreed to ignore it?

It is regrettable that no sharp-cut answer can be given to such questions. It cannot be denied that persecution has often been successful, and that the cause of truth has had many martyrs. Also the question of the relations of truth to survival-value is perhaps the most difficult of all the questions which can be raised about truth. On the one hand, it is clear that opinions which are directly lethal in their effects on those who hold them cannot be held 'true'. If they do not perish altogether with those who hold them, they can survive only as 'false'. It is also clear that opinions which have a high survival-value will be extensively believed to be 'true', and that therefore their survival-value must form an important factor in our current 'truths'. But it will not be possible to explain *all* 'truth' as reflecting merely the survival-value of beliefs, unless we suppose also that the cosmic order is definitely such as to *force* a particular set of beliefs upon the mind, and to leave it no choice. And this does not appear to be the case.[11] Our choices and preferences appear to be themselves factors in the survival of many beliefs, and nature appears to admit of a variety of interpretations.

It is better, therefore, to conceive 'working' as a wide genus with a number of species, some of which have not been fully determined and are still in dispute. For such disputes there may be good grounds. For the working of truths is really specific in each science, and relative to its peculiar problems and subject-matter. For example, the working and the tests of truth in mathematics are not the same as in biology or psychology. So we should not be surprised to find that there are still greater differences between science and religion. In the one case the relevant working appeals to the senses, in the other to a perception of spiritual value, and, perhaps,

to certain incommunicable and apparently self-validating experiences called 'mystical'.

But both are of great vital importance, and their difference does not prevent both 'workings' from being species of the same genus. There may long continue to be disputes about *what* workings are relevant to what truth-claims, but the general logical requirements will remain the same in all cases. In all, claims will require verification, and verification of a definite and appropriate kind, and a dispute as to whether a particular verification is adequate has simply to be fought out by the parties concerned. For example, most people would agree that the belief in the existence of other minds has worked so well that it may be considered to have been abundantly verified; but a few paradoxers may continue to argue for a 'theoretic' solipsism, on the plea that another mind must 'transcend' one's personal experience and so is incapable of being directly verified.

It may, then, have to be pointed out to them that this belief of theirs does not appear to be genuine; for they do not *act* on their professed belief, and it does not meet the severest of all the tests of belief, that of action.

In any case we may reject as utterly false the calumny that Humanism dispenses with objective tests of truth, accepts everything as 'working', and allows us to hold true whatever we please. As a matter of fact this perilous privilege is enjoyed only by the apriorist, because he does not distinguish truths from truth-claims and dispenses with verification.

§22. (IV) Truth as Dependent on Consequences

This formula may be dealt with more briefly. Its chief value lies not in what it affirms but in what it denies. By insisting on the empirical testing of truth-claims by the consequences to which they lead, it denies all a priori theories of truth. By refusing to let a truth-claim validate itself by its own assurance, it effectively rules out all the intuitionist theories which regard truth as 'self-evident', and all a priori theories which regard 'necessary' truths as imposing themselves upon us by main force.

But like the 'working' formula it is not explicit on the question of what consequences are to count as relevant to a truth-claim. It is obvious, of course, that the *value* of the consequences will make a difference. Consequences judged 'good' will support a truth-claim, while those judged 'bad' will conduce to its abandonment. But it is not necessary to *state* that the consequences must be good; since 'good' simply means 'value', and we have also seen that 'truth' means 'logical value'. Nor need we say that the consequences must be 'practical'; for *all* consequences, even the most 'theoretic', become practical in the end, and affect action.

More difficult questions arise when it is asked how the relevance of consequences to a truth-claim is determined and how the connexion of a claim and *its* consequences is ascertained. Here again, as in the case of 'working', and for very similar reasons, we must be prepared for disputes and for a penumbra of 'debatable truths' which are not recognised by all and are still affairs of party and of opinion. But, on the principle of *sordet cognita veritas*, these are often the very truths to which we are most attached.[12]

§23. The Cognitive Function of Doubt

The prevalence of doubts and disputes does not, however, cast a slur upon truth, and we should not allow ourselves to be frightened out of a cherished belief on this account alone. For doubts and disputes are normal accompaniments truth-seeking, and in no wise detrimental. There is no stronger stimulus to inquiry than doubt, and, as the Greeks were well aware, nothing is more likely to raise the vital issues to be inquired into than a well-conducted dispute. Doubtless Socrates and Plato exaggerated when they declared that the ultimate truths of metaphysics would reveal themselves to those who practised the art of conversation with attractive young men, but 'dialectic' becomes deadening only when it becomes dogmatic (as with Hegel), and the progress of knowledge has always depended essentially on the doubt which discovers, and the ingenuity which solves, good problems. If therefore we are considering the interests merely of knowing there is little to be said against the habit of doubting.

But, of course, this is not the whole story. Knowing is only *one* of the activities of living, and inextricably entangled in the others. Also, it is far from easy to determine where knowing begins, or ends, and so what operations may or may not have a bearing on it. Our first impressions may be quite misleading, and it would certainly be rash to leave the drawing of the frontier lines round knowing to the prejudices of the academic man. The issue is too important to be prejudged: it can be decided only in the light of much experience.

Nevertheless, if we are willing to make reservations for the doubtful cases, and hold ourselves ready to reconsider all, we are free to admit that doubt may become an incubus when we pass from knowing to acting. It is this that has given a bad name to doubt. For there is then a real danger that under the distraction of our doubts we may act in a hesitating and half-hearted manner. And this may be fatal. When, therefore, it comes to action, we must often act as if we had *no* doubts. We must 'make up our mind' to act resolutely on what we judge to be the *best* belief. And to do this we may have to drop our doubts, or at least to deny them all influence on our acts,

and to 'act as if' we did not feel them. Now, this combination of intellectual doubt with confident action is not easy; perhaps only superior minds are psychologically capable of it: so the ordinary man has judged it safer and simpler to condemn doubt altogether. But this is to condemn intellectual activity, and to condemn his mind to atrophy.

The prejudice against doubt, which (to the great detriment of their intellectual development) all the religions have sanctioned, is thus practical in origin and expressive of man's unconscious pragmatism. The theoretic fertility of doubt is plain and undeniable; but it goes for nothing, because men are bent on action.

Nor should this be a matter for unalloyed regret: for it reveals how much more than 'theory' goes to the making of beliefs; how much more exacting a test, even of knowledge, is action than cognition; and how subtle are the interactions of knowing and doing.

For it should not be assumed that when a belief is acted on it is left unchanged. The action will inevitably react upon the belief. It will fortify or weaken it, confirm its 'truth' or convict it of 'error'. It has its reaction on every sort of truth claim, not merely on the lie, but on the fiction, on the hypothesis, the methodological assumption and the postulate and can transform their logical status—often insensibly and without our feeling it. This power of action has not passed wholly unobserved, though its universality has not been realised: it has been particularly noticed, and resented, in the case of the suppression of doubts and the practical assumption of beliefs which are not theoretically certain; but logicians would have done better to *understand* the operation of the 'will to believe', instead of merely denouncing it. In extreme cases, where there is *no* connexion between the belief to be verified and the verifying 'consequence', it is clear, of course, that exception may be taken to this method of proof. If, e.g., a prophet tried to verify a doctrine that the value of π was 3? by performing a miracle, it is to be hoped that some would have the strength of mind to urge a *non sequitur*; but the cases actively disputed are not of this kind. They concern rather such questions as whether, and how far, the good consequences and working of a religion can authenticate its Creeds, and they are really disputable because the parties naturally see and emphasise respectively the good and the evil in the system to be tested by its 'consequences'. One may admit in general that the goodness of the consequences of a truth-claim will lead men to overlook the flaws in its logical structure. Perhaps, however, they err, not so much in over rating the closeness of the logical relation between 'truths' and their 'consequences' and in yielding to persuasion by the latter, as in neglecting to consider whether the consequences which impress them are in fact the *best* that can be observed, and whether they would not follow equally well from some alternative theory.

On the whole, then, we must be content to leave unsolved the general question of how, in the abstract, the relevance of the consequences to the truth-claim they are said to verify is to be determined. In principle, questions of relevance are always disputable, and an argument which takes a sequence as a consequence may always be charged with being a *post hoc ergo propter hoc* fallacy. There is no answer to this charge, save by going into the merits of each case. But the Humanist theory of Truth stands out among its rivals by its willingness to recognise the actual procedures of human knowing and to make the best of them.

NOTES

1. E.g. *Eth. Nic.*, vi, 2, 2.
2. *Scrambles among the Alps*, p. 279. Italics mine.
3. Cp. *Problems of Belief*, p. 575 f.
4. *Essays on Truth and Reality*, p. 220.
5. Cp. *Theaetetus*, 209.
6. Similarly, the 'universal' minds of the absolutist philosophies and the 'divine' minds of the various theologies are all vitiated by so radical a difference from the motivation and procedure of human minds that the latter can never reach them by any practicable route.
7. Italics mine.
8. This is notorious as regards the logic of F. H. Bradley and H. H. Joachim, and their metaphysic does nothing to redeem the logical situation. For even if we are willing to take it *on faith* that the Absolute possesses absolute truth, this is so far from vindicating human truth that it casts an additional slur upon it. Similarly, the intellectualisms, whose ultimate appeal is to brute fact or 'animal faith', are logically scepticisms.
9. This false conversion of *all truth is useful* was, I believe, first alleged by Prof. G. E. Moore in an early review, and first repudiated by me in *Humanism*, p. 38 (1903). The controversy in *Mind*, Nos. 83, 84, 86, 88, 89 (1912), between Miss L. S. Stebbing and myself turned on this point. The lady was unable to quote for this false conversion; but she had probably read it in the *index* to James's *Pragmatism*. It does *not*, however, occur in the text.
10. Or 'validation'. But the word 'valid' had better be left to Formal Logic. For 'validity' is its *substitute* for 'truth', and it will turn out that the 'true' cannot be 'valid' nor the 'valid' 'true' (Cp. Chap. III, §12; Chap. VI, §3 ; Chap. XIII, §6).
11. Cp. p. 504 and see *Problems of Belief*, chap. xii, especially p. 182 f.
12. Cp. *Problems of Belief*, p. 42.

Part Six

MEANING AND LOGIC

INTRODUCTION TO PART SIX

Hugh McDonald

One of Schiller's main projects was the critique and reform of logic, particularly formal logic. The contemporaneous view of logic in the Universities was that logic was the science of "thought." Schiller believed that logic did not follow human thought and that it ignored the situation in which thought arose and the actual processes of problem solving by humans. He was opposed to the complete "abstraction of logic from psychology." He argued for consideration of the role of purposes, interests, feelings and other psychological factors in thought. Finally, he believed that logic was a normative science concerned with the "antithetical valuations" of truth and falsity.

Schiller's first philosophy describes and examines a system of values (see part two). He also claims values are the basis for logic: "it is the *de facto* existence of this habit of evaluation that gives rise to the normative sciences, and the function of logic as a normative science is to regulate and systematize our valuations of 'true' and 'false.'"[1] Values are analyzed as the end in view of logical rules whose outcome is truth-values. Truth evaluation is a major function of logic, which Schiller, like Peirce, argued was a "normative" science, along with ethics, grammar and esthetics. Logicians must evaluate claims to truth. Schiller accepts from the tradition the notion that philosophy includes evaluation of arguments and a critical approach to past thinkers.

Schiller was a critic of formal truth in logic. He argued that formal truth artificially abstracts from the content of thought. "It is not possible to abstract from the actual use of the logical material and to consider 'forms of thought' in themselves, without incurring thereby a total loss, not only of truth but also of meaning." (*Formal Logic*, "Preface")

The origin of the concepts and abstractions of logic begins with individuals in particular situations. While such origins do not entirely explain the "meaning" of concepts in present use, they cannot be ignored either. Thus there is a type of holism in Schillerian philosophy that involves consideration of a number of factors and elements involved in knowledge.

Particularly, Schiller traced the hidden psychological roots of logic and the human conditions of inference. He argued forcefully and polemically that if logicians define their study as the science of thought, they could not ignore psychology. There is a connection between psychology, the descriptive science of the mind, and logic, the normative science of thought. His critics have particularly taken him to task on this point, accusing him of confusing psychology and logic. An origin in psychology, they argue, does not make logic identical to psychology. But Schiller acknowledged this point. He did not believe that logic was identical with psychology,[2] a point even some Schiller scholars have missed. Logic is concerned primarily with meaning and inference; psychology with purposes (motives). Schiller was aware of the distinction of psychology and logic, but also saw their connection. Their meeting ground was in "thought." The norms of science grow out of the facts of human psychology as axioms derived from thought. Thus he traced the psychological origin of the principles of identity and non-contradiction. Logic was abstracted out of the actual thought processes of humans.

Schiller divided the study of logic into three main areas: the meaning of terms, the theory of judgment, and the validity of inference. He attempted the monumental task of an extended critique of all three areas in *Formal Logic*. Schiller was a pioneer in his study of meaning, which he argued had not been studied to any great degree by traditional logic.[3] Logic is concerned with concepts, i.e. thinking defined narrowly as conceptual and thus including meaning. Schiller, anticipating the later Wittgenstein, argued against the separation of meaning from use.[4] Meaning is largely contextual and differs in different situations. Thus meaning, like reality, is constantly changing. All meaning depends upon purpose[5] which Schiller takes to be one of the four pragmatic principles and consistent with Peirce's theory of pragmatic meaning.

Schiller was a critic of contemporaneous treatments of formal judgment. Judgment is the act of thought that is an essential component of inference. Schiller wondered, if judgments are wrong how can inferences made from them be correct? Thus the connection of logic and psychology in thought, particularly in judgment, requires that logic pay some attention

to psychological origins. He also noted that propositions are statements of judgments and so require the validity or truth of a judgment as well as the correct meaning of terms. But the truth of propositions is hypothetical, since they are subject to correction.

Schiller also included a critique of necessary inference. The dilemma of the logician is that if inference is abstracted from all meaning, in purely formal treatments, then it risks being inapplicable and impractical. If it makes reference to the meaning of the thinker, it must explore psychology and thus lose its purity. Also, inferences are supposed to give us new information, but if the conclusion is implicit in the premises, the former can only be new in the psychological sense and results in no true advance. As for the syllogism, Schiller argued that all syllogisms are subject to the fallacy of the ambiguity of middle terms.

He also criticized the notion common especially among the British Hegelians, who claimed inferences of thought are somehow identical with reality. Statements about things should not be confused with things themselves; logical inference is not equivalent to causal relations in the world.

Schiller's positive contribution was a series of essays that outlined a "Voluntarist Logic" (*Logic for Use*). Schiller substituted "voluntarist" logic for "humanist" logic to sharpen the contrast with the formal logic of "intellectualism," which he accused of false abstractions. Indeed, Schiller's critique of the abstractions of philosophy was one of his main critical preoccupations. Hypostatization of abstractions leads ultimately to an arid intellectualism that utilizes logic chopping to deny change. Voluntarist logic emphasized the role of choice in logic, meaning and even inference. Choice is involved in the act of abstraction and thus precedes the use of abstractions by reason, e.g. in definition. Choice also means that the logic of necessity, formal logical inference, grows out of and thus is based on human thinking. The origin of logic lies in human thought and is voluntarily selected by individual human minds. The critical evaluation of knowing, the selection of subjects of inquiry, judgment, and selection of values involve choices. The logic of choice precedes and conditions the logic of necessity.

The reform of logic should proceed in the direction of the logic of inquiry. Schiller viewed scientific method as the paradigm of knowledge and thus thought that the logic of actual scientific procedure was the model for a practical logic. Like Peirce, he tried to demonstrate the logic of science. He argued for "the true logic of real reasoning which starts from the act of thought and so does not lose touch with science and practical life."[6] Logic should be "use" centered not abstract, a means for human agents in coping with the problems of life.

Schiller also spoke of "personalist" logic in his late work, *Must Philosophers Disagree*. Personalist logic rests on the assumption that thinking is a

mental process, that meanings occur in minds, that minds are personal, and that there are many different minds, which cannot be reduced to a standard pattern. Thought, hence logic, is originally dependent upon the experience of individual persons. Like Dewey, he believed that thinking starts in a problematic situation and is directed toward an end in view. Judgment is also personal. Since different minds may come to different conclusions from the same "data," logical pluralism seems requisite. However, there is a tension between this emphasis on the differences between individuals and the norms of inference valid for all. Schiller tried to emphasize how the latter grew out of the former.[7]

Formal logic was undergoing changes during Schiller's lifetime, particularly, the introduction of the new symbolic logic and the expansion of logical methods and modes. On the whole, Schiller did not see the value of these novelties, which he believed repeated the mistakes of the older Formal Logic. The critics of psychologism soon split into two camps, those who like Frege wanted a total divorce of logic from psychology; and those, like Schiller, who thought it should follow actual thinking more closely. Defenders of formal logic soon redefined it as the study of valid "inference," under the proddings of Frege, who criticized "psychologism" in logic. Whether this change was a subtle acknowledgment of Schiller's critique is unclear, but in any case, it has taken much of the edge off his attack. However, the main thrust of Schiller's arguments remain, namely, that logicians are humans, reasoning takes place in the mind of individual persons and that validity must be evaluated. The "feeling" or "intuition" of certainty is psychological. Logic is a human product, however purified it becomes. Schiller refused to detach logic from the human thinker. There can be no logic without a logician.

Although his fame has faded, the topics Schiller addressed in his logical studies make him a pioneer in philosophy of logic. The relevance and role of subtle logical technicalities to life and science are issues as fresh as when Schiller first raised them. While the overwhelming consensus is that logic is distinct from psychology, and the efforts of logicians have been in the direction of an ever more "pure" logic, Schiller's issues remain at the basis of their endeavors.

Notes

1. "Truth," this volume, p. 480.
2. Ibid.
3. "The Meaning of Meaning," this volume, p. 592.
4. "The Humanist Theory of Truth," this volume, pp. 530–31.
5. "The Definition of Pragmatism and Humanism," this volume, p. 50.
6. *Formal Logic*, "Preface."
7. "Axioms as Postulates," this volume, p. 411.

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THE RELATIONS OF LOGIC AND PSYCHOLOGY

§1. It will, probably, be conceded by all philosophers that the sciences are all (in some sense) connected with one another, and that the precise way in which their connexion is conceived will depend on the way we conceive the sciences themselves.[1] Nor will it be disputed that since the definitions of a growing science must to some extent change with the growth of our knowledge of the data of that science, the relations of such sciences to each other cannot be immutable. Consequently it may be inferred with some confidence that the Humanist movement must have introduced some modifications and novelties into our conceptions of Logic and of Psychology, and of their relations to each other. This has, indeed, been pretty widely recognized. In Germany, for example, the analogous tendencies are commonly described, as 'Psychologism', and if 'Psychologism' means a demand that the psychical facts of our cognitive functioning shall no longer be treated as irrelevant to Logic, it is clear, both that Humanism is Psychologism, and that the demand itself is thoroughly legitimate, and not to be dismissed with a mere *non possumus*. For when Humanism demands that philosophy shall start from, and satisfy, the whole man in his full con-

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creteness, and not exclusively concern itself with a sort of elegant extract, a highly perfumed and sophisticated 'essence' of man, dubbed 'the rational intelligence', there is certainly included in its demand a much greater respect for the actual procedures of human cognition and a much less easy-going acceptance of petrified conventions than the traditional Logic will find at all convenient.

§2. Yet a sincere attempt to comply with the demands made upon it, whether in the name of Psychology or of Humanity, would do Logic no harm. Nay, it might even prove its salvation. For its present condition is anything but prosperous. It has lapsed into an impotent scepticism, which is irremediable so long as it cannot, or will not, emancipate itself from intellectualistic presuppositions which render actual knowing inherently 'irrational'. So it has been forced practically to abandon the attempt to account for knowing. It has been driven to represent the processes by which *de facto* knowledge is increased as logically invalid. Predication has become for it a puzzle, inference a paradox, proof an impossibility,[2] discovery a wonder, change a contradiction, temporal succession incompatible with Science (which all the while is busily engaged with predicting the future!), individuality an irrelevance, experience an impertinence, sensation a piece of unmeaning nonsense, thinking 'extra-logical', and so forth and so on. After delivering itself of these valuable 'criticisms' of our ordinary cognitive procedures, it has retired into an 'ideal' world of its own invention, out of space, out of time, out of sight (and almost out of mind!), where it employs its ample leisure with studying 'types' that never lived on land or sea, and constructing a *hortus siccus* of 'forms', and compiling unworkable 'systems', and concocting unrealizable 'ideals', of 'Thought', all of which have about as much relation to actual knowing and to human truth as the man in the moon! But even in its suprasensible asylum the Erinyes of the Reality it has abandoned and betrayed pursue it; it cannot manipulate to its satisfaction even the figments and phantoms of the imaginary world which haunt it. Its 'forms' do not afford it aesthetic satisfaction; its 'types' are broken before ever they are used; its 'systems' will not hold together; its 'ideals' decline to be harmonious. In vain does it cry out to metaphysics to save it from imminent collapse into the abyss of scepticism; its cognate metaphysics have abundant troubles of their own, and are even more hopelessly involved in morasses that border the brink of the pit; they find, moreover, *all* the sciences beset by similar distresses, and can vouchsafe no answer save that the Real, at all events, does not appear, nor can what appears be real.

In such a desperate plight it is surely not unbecoming to approach the logician with the suggestion that his troubles may be largely of his making, that possibly his conception of Logic is at fault and capable of amendment, and gently to point out to him that after all what he originally undertook

to do, but has now apparently quite forgotten, was to provide a reasoned theory of actual knowing, that the existence of such actual knowing is an empirical fact which is not abolished by his failure to understand it, that this fact constitutes his datum and his *raison d'être,* that he may as well accept it as the touchstone of his theories, and that it is the 'ideals of thought' which must be accounted wrong if they cannot be rendered compatible with the facts which formed their basis. He may at least be called upon to consider the possibility that, if he consents to start from actual knowing, and refrains from welcoming 'ideals' until they have been authenticated by their connexion with the facts and verified by their working *when applied*, he may reach an altogether more profitable and effective conception of Logic than that which is falling to pieces.

§3. Let us make bold, then, to re-define our sciences and to re-conceive their relations.

And first of all let us consider the wider and lower of these sciences, to wit Psychology. Without concerning ourselves with the questions as to how far Psychology is, or may be, experimental or explanatory, and even as to how far its descriptions should be 'functional' rather than 'structural', as not affecting our present purpose, we may most conveniently conceive it at present as a *descriptive* science, whose aim is the description of mental process as such. It is implied in this, and hardly in need of explicit statement, that the mental processes of individual minds are intended. For we cannot experience or observe mental processes in any other way. Still it is worth noting that, in this implication, Psychology gives us a certain guarantee that it will do justice to the concreteness of the actual human soul; so far, at least, as the necessary abstraction of its standpoint consequent on the limitation of its purpose permits it to do.

The definition we have adopted clearly assigns to Psychology a very extensive field of operations—practically the whole realm of direct experience. It recognizes *a psychological side also to everything that can be known*, inasmuch as everything known to exist must be connected with our experience, and known by a psychical process. In so far as any real is known, a process of experiencing is involved in it, and this process appertains to the science of Psychology. Thus all physical objects and questions become psychological, so soon as we ask how they can be experienced, and whether the psychical process of experiencing them warrants our claiming for them an 'objective reality'. In some cases, as e.g. with regard to the existence of sea-serpents, N-rays, and ghosts, the question about the 'reality' of these objects is really one as to whether the psychological treatment does not exhaust their significance, or whether the psychical processes are such as to justify our interpreting them as indicative of 'objective reality'.

Now among mental processes those which may be called 'cognitive' are

very common and predominant, and therefore the description of cognitive process will properly fall into the province of Psychology. It stands to reason, moreover, that it must be described as it occurs, and without arbitrary attempts at reserving some of its aspects for the exclusive consideration of another science. Now, as cognitive process is naturally productive of 'knowledge', and valuable as such, it follows that cognitive values are properly subject to psychological description. Mental Life is, naturally and in point of fact, packed with values ethical, aesthetical, and cognitive ('logical'), of which it is the vehicle.[3] It is the plain duty, therefore, of Psychology to record this fact, and to describe these values. Cognitive values, as psychical occurrences, are facts for Psychology. It is their specific character which subsequently renders them subjects for Logic. Their specific character is that they are *claims to truth*, and employ the predicates 'true' and 'false'; precisely as e.g. ethical judgments use the predicates 'right' and 'wrong'.

The special value, however, of these specific valuations and their functions in the organization of Life form no part of the purpose of Psychology. Having a merely descriptive purpose, it is content to record all values merely as made, and as facts. Thus it is psychologically relevant to recognize that the predication of 'true' and 'false' occurs, and that what A judges 'true', B may judge to be 'false'. But it is psychologically indifferent that A is a much *better* judge than B. Psychology, that is, does not seek to *evaluate* these claims, to decide which is really 'right', or what is really 'true'; still less to frame generalizations as to how in general claims are to be sustained, and humanly valid judgments to be attained. All processes of immanently and reciprocally criticizing, systematizing, harmonizing, and utilizing the claims actually made fall as such without its purpose: they are the business of Logic.

§4. The relation of the two sciences to cognitive process, and to each other, is thus quite simple. Yet it has been woefully misunderstood. Thus it is commonly asserted that Psychology does not recognize values, nor Logic care about psychical existence. Yet if so, how could values enter human minds, and how could truths ever become facts?[4]

Still more extraordinary is the assumption that Psychology is not to describe values. Yet this assumption is made without the least consciousness of its monstrosity, and without the slightest attempt to defend it, as if it were self-evident, by writers of repute. Dr. Hastings Rashdall gravely assures us that "the Psychologist . . . knows nothing the truth or falsity of judgments."[5] And even Prof. Hoernlé takes it for granted[6] that "truth, in fact, is not an object of inquiry to Psychology at all. That certain of the mental processes which it studies have the further character of being[7] true or false, is, for Psychology, an accident," and infers that "this inability to deal with validity seems to beset all psychologies alike." This arbitrary restriction on the functions of Psychology is no doubt in the interest of an

impracticable conception of Logic, which instinctively seeks to reduce Psychology to an equal or greater futility; but we, assuredly, can have no reason to accept it.

For us the function of Logic develops continuously, rationally, and without antagonism, out of that of Psychology. Cognitive values and claims to truth exist as empirical facts. If they were all indefeasible, congruous, and compatible with each other, as, e.g. my having a toothache is compatible with your not having one, there would be no ground for a further science. But in point of fact *false* claims to truth are commoner than valid ones, and they not only conflict with 'the truth', but also with each other, so that the problem of *Error* cries out for further treatment.

§5. There is need, therefore, for a discipline which will evaluate these claims, and try to determine the various degrees of validity and trustworthiness which may be assigned to them. *Logic* is the traditional name for the science which undertakes this function. It may be defined as *the systematic evaluation of actual knowing*. It is a normative science, because it not only records defects, but prescribes remedies; it reflects on the claims actually made, and prescribes methods for their evaluation. But its normative function arises quite naturally out of our actual procedures, when we observe that some cognitive processes are in fact more valuable than others, and select the more valuable among conflicting claims. Thus the need for Logic, its genesis and its procedures, all seem to be essentially empirical, and it is quite conceivable that no special science of Logic should ever have arisen. If all claims were *ipso facto* true and valid, if we had never been confronted with conflicting claims or driven by our 'errors' to rescind our first assertions, what need were there for Logic? Our attention would never be called to the problem of values, our primary attributions would stand, and no superior science would be devised to adjudicate between conflicting judgments.

As it is, the natural process has to be regulated and controlled, and so falls a prey to *two* sciences. The same cognitive values occur twice over, first in Psychology as so many facts, then in Logic, as subjects for critical evaluation. Nor is it difficult to understand how two sciences can work over the same ground: they cultivate it with a different purpose, and so raise different crops.

§6. It is manifest, moreover, that the two sciences must work together hand in glove. Logic requires trustworthy descriptions of cognitive happenings before it can evaluate them with safety; for these it should be able to rely on the cooperation of Psychology. In other words, the collection and preparation of the material which the logician proposes to use is essentially a psychological function, alike whether it is performed by a psychologist who bears in mind the need of Logic and the needs of Logic, or whether the logician is enough of a psychologist to do it for himself. In the latter

case he resembles a painter who, like those of old, makes and mixes his own colours; the logician, on the other hand, who proposes to dispense with the aid of Psychology is like a painter who will not use anything so gross as colours wherewithal to paint his 'ideal' pictures.

Thus Logic and Psychology, though perfectly distinct, are perfectly inseparable. It is, moreover, because they are so intimately related that they must be so sharply distinguished, and because they have been so clearly distinguished that they can be so closely connected. It is hardly possible to exaggerate the intimacy of their relations. Nothing psychological can be affirmed a priori to be irrelevant to Logic. The logician, no doubt, from motives of practical convenience or necessity, often abstracts provisionally from trivial characteristics of the actual psychic process; but, except in cases where he has learnt from experience what features are unessential and may safely be neglected, he always takes a certain risk in so doing. Now this risk may be fatal to the validity of his argument, and in any case impairs its theoretical exactness. The formal logician, therefore, can never, as such, claim to be the *final* judge of the value of any argument. He can never by his 'rules' preclude the examination of its 'material' worth; however formally perfect the syllogism which expresses it, a fatal flaw may lurk in its actual application; however grotesque its formal fallacy, a road to the truth may be barred by its rejection. If he is wise, therefore, he will not magnify his office of reminding reasoners of what they are about, and of how far their reasonings are attaining the ends they aim at. Thus the burden of proof, at any rate, lies on those who affirm that the logician may assume the irrelevance of any psychic fact.

Nay, more. One never can tell whether the proper answer to a 'logical' claim does not lie in the psychological domain, and take the form of a psychological explanation. Thus a claim to have discovered the secret of the universe is not usually met by a 'logical' refutation, but by an inquiry into the assertor's 'state of mind', and the revelations of mystic ecstasies are treated as exhibitions of mental pathology. We know, in short, that it is folly to reason with the mentally deranged and that, even in dealing with the sane, it is usually more effective to *persuade* than to *convince*.

We may take it, therefore, that the logician's ignoring of Psychology, and abstracting from the psychical concomitants of actual thinking, can only be very hazardous affairs, which must be understood to be strictly conditioned and limited by the requirements of his temporary purpose. When the logician really knows what he is about he does not intend them to be more than provisional, nor dream of transcending human experience by their aid. Unfortunately, however, this simple situation has been misapprehended so long, and so profoundly, that it is imperative to set forth in greater detail the thoroughgoing dependence of Logic on psychological

assistance. We shall do well, therefore, to show (1) that without processes which are admittedly psychological the occurrence of cognition, and even of thinking, is impossible; (2) that all the processes, which are regarded as essentially and peculiarly 'logical', have a well-marked psychological side to them, and that their logical treatment develops continuously out of their psychological nature.

§7. (1) All actual thinking appears to be inherently conditioned throughout by processes which even the most grasping logician must conceive as specifically psychological. It is difficult to see, therefore, on what principle logic has any business to ignore them, and to claim to be 'independent' of what must influence its own structures in every fibre. At any rate the *onus probandi* would seem to lie on those who affirm that these correlated and interpenetrating processes do not influence each other, and that, therefore, their psychical nature may be treated as logically irrelevant. Without, however, standing on ceremony, let us show by actual examples that our thinking depends for its very existence on the presence in it of (*a*) interest, (*b*) purpose, (*c*) emotion, (*d*) satisfaction, and that the word 'thought' would cease to convey any meaning if these were really and rigidly abstracted from.

(*a*) Where can we discover anything deserving of the name of thought which is not actuated by psychological interest? To affirm this, moreover, seems merely a truism. It is merely to deny that thinking is a mechanical process like, e.g. gravitation. It is to assert that the processes during which the course of consciousness comes nearest to being a purposeless flux of mental images are most remote from cognition. It is to deny that thinking proceeds without a motive and without an aim, and to assert that, in proportion as interest grows more disciplined and concentrated, thought becomes more vigorous and more definitely purposive.

The only way of contesting our inference would seem to be to affirm that the specifically logical interest is *sui generis*, and not to be confounded with the common herd of its psychological congeners.[8] This contention, however, we must regard as merely an arbitrary fiat. It is merely a refusal to let Psychology describe all interests as such. And this refusal can only be prompted by ulterior motives. Moreover, even if the allegiance this special interest owes to Logic exempted it from psychological description, it could do so only *qua* its *specific* nature. *As an interest* it would still fall into the province of the science which describes the *generic* nature of interests. Lastly, a Humanist Logic can recognize no reasons for relegating the cognitive interest to a world apart, as if it were unconcerned with life and dissociated from personality. On all these grounds, then, we must repudiate the claim that a thought which depends on interest can be independent of Psychology.

(*b*) Purpose may be conceived as a concentration of interest, and

thinking must be conceived as essentially purposive, and as the more consciously so, the more efficient it grows. Whenever Logic, therefore, seeks to represent the actual nature of thinking, it can never treat of 'the meaning' of propositions in the abstract. It must note that the meaning depends on the use, and the use on the user's purpose. Now this purpose is primarily a question of psychical fact, which admits of being psychologically determined, and which no theory can safely ignore. If we attribute to logical rules a sort of inherent validity, a sort of discarnate existence apart from their application to cases of actual thinking, we reduce them to phantoms as futile as they are unintelligible.

(*c*) Emotion accompanies actual cognition as a shadow does light. Even so unexciting an operation as counting has an emotional tone. The effect of this emotional tone seems to be various, but may be salutary; we can often observe how love and hate inspire men with an insight to which the fish-like eye of cold indifference could never penetrate. It need not be denied, however, that in some people and in some forms it may have a hurtful effect on the value of the cognitive results. But this must be shown, and cannot be assumed, in any given case. Nor is its alleged hurtfulness a reason for denying the existence of this emotional bias, except to those who are very far gone in that application of 'Christian Science' to philosophy which declares all evil to be 'appearance'. Our only chance of counteracting emotional bias, moreover, lies in admitting its existence.

(*d*) If a feeling of satisfaction did not occur in cognitive processes the attainment of truth would not be felt to have value. In point of fact such satisfactions supervene on every step in reasoning. Without them, logical 'necessity', 'cogency', and 'insight' would become meaningless words.

It seems clear, therefore, that without these psychological conditions which have been mentioned, thinking disappears, and with it, presumably, Logic.[9] They cannot, therefore, be dispensed with. Purpose, interest, desire, emotion, satisfaction, are more essential to thinking than steam is to a steam-engine.

§8. (2) The most fundamental conceptions of Logic, like 'necessity', 'certainty', 'self-evidence', 'truth', 'meaning', are primarily descriptions of processes which are psychical facts. They are inseparably accompanied by specific psychical feelings. What is called their 'strictly logical' sense is *continuous with* their psychological senses, and whenever this connexion is really broken off, its meaning simply disappears. This need not here be set forth at length. The logician's embarrassments in discriminating 'logical' from 'psychological' necessity[10] and self-evidence are well known. It is also beginning to be clear that he had not, until the pragmatic controversy arose, ever seriously considered what was the nature of truth-predication as a psychic process.

But the conception of 'certainty' is often considered the essential differentia of logical thought, and, therefore, may deserve a brief discussion. Every one, of course, would have to admit that all 'certainty' in its actual occurrence was accompanied by a psychical feeling of certainty in various degrees of intensity. An appeal might, however, be made to the distinction of 'logical' and 'psychological' certainty. Psychological certainty, we commonly say, is 'subjective', and exists for individuals; 'logical' certainty is 'objective', and imposed on intelligence as such. Again, psychological certainty may set in long before logical proof is complete, often long before it ought; and conversely our psychological stupidity may rebel against mathematically demonstrated truths. From these current distinctions the logician is apt to infer that psychological and logical certainty have really nothing to do with each other and ought not to be confused. But if this be true, why are they both called by the same name? Surely, if logicians wished to keep them apart and could afford to do so, they could label them differently. That they have not done so is a strong presumption that it is impracticable.

Indeed, the truth would seem to be, (*a*) that if the *feeling* of certainty is eliminated the word becomes unmeaning, and (*b*) that 'logical' is quite continuous with psychological certainty. The notion of' logical 'certainty arises from the extension of potential beyond actual purpose in thinking. We actually stop at the point at which we psychologically are satisfied and willing to accept a claim to truth as good; but we can sometimes conceive ulterior purposes which would require further confirmation, and other minds that would be satisfied less easily. This engenders the ideal of a complete 'logical' proof transcending that which is good enough for us, and capable of compelling the assent of all intelligences. But even if it could be attained, its certainty would still be psychological, as certainly psychological as is our capacity to project the ideal. Both are dependent on the actual powers of individual minds. Thus for the moment mathematical demonstration seems to satisfy the logical ideal of most intellectualist logicians, and is praised as absolutely certain. But that they think it so is merely psychical fact. For the reason simply is that so far they do not seem to have psychologically conceived the thought of varying the postulates on which such demonstration rests. If they had recognized the hypothetical basis of mathematical certainty, they could conceive something more 'certain'.

§9. The fundamental logical operations, like meaning, conceiving, discriminating, identifying, judging, inferring, all have psychological aspects, and could not come about by 'pure' thought. I have suggested elsewhere[11] that logical identity is always a postulate. It should be stated as that '*what I will shall mean the same, is (so far) the same*'. And by 'the same' I do not mean *indistinguishable* (though this criterion too rests on a psychological property) as Mr. Bradley does in what he considers "the indisputable basis of all

reasoning," the axiom that "*what seems the same is the same*," which he himself calls "a monstrous assumption."[12] Logical identity emphatically does not rest on an easy acquiescence in appearances or psychical carelessness about noticing differences. It is a conscious act of purposive thinking, performed *in spite of observed differences*. 'The same' means a *claim* that for our purposes these differences may be ignored, and the two terms treated alike.

The principle, therefore, is not mere psychological fact, carrying no logical consequences. Nor certainly is it a mere tautology, 'A is A'. It is ultimately one of the devices we have hit upon for dealing with our experience. As such it may be supposed to have passed through an experimental stage as a mere postulate; and even now a certain risk remains inherent in its use. That there shall be identity we have good grounds for insisting, but our claim that any A is A may often be frustrated. That therefore every attempted 'identification' should come true, would be the experience only of an omnipotent being, whose volitions the course of events could never contravene. Only to such a being (if such can be conceived) would it be self-evidently, invariably, and 'necessarily' true that 'A is A'; in our human thinking the identities we select may prove to be mistaken. Thus the validity of the principle in the abstract in no wise guarantees its validity in its actual use, or its application to any particular case. But on the whole the principle is valuable enough for us to ascribe our failures, not to its inapplicability to our world, but to our own stupidity in selecting the 'wrong' identities.

Meaning is a psychical fact which should have great interest for Psychology. It is also a fundamental function for Logic. But unfortunately intellectualist logicians, by abstracting too easily from its concrete nature as a psychical process, have involved the whole subject in confusion and completely obscured the problem of understanding.

As we saw in Essay i. §2, meaning depends upon purpose, i.e. upon *context*, as the purpose lies in the context. Now that context is of logical importance is, in a manner, recognized. But this recognition takes the form of asserting that the meaning (and truth) of an assertion depends on the totality of knowledge; and this at once rules out *human* knowledge. For as we cannot know this totality, if meaning depends on this, it is impossible. This interpretation of context, however, is quite false. Meaning is not in the first instance logical at all, but psychological. It is primarily a question of what the person who made the assertion *actually meant*. And as, of course, *the whole of his concrete personality* went to the making of the assertion, and contributed to his actual meaning, a case must be made out for its mutilation by 'Logic'. The next question is the problem of the 'understanding' or transference of the meaning. We have to discover not merely what the assertor meant, but also how he was understood. The inherent difficulty of this problem, to which since the days of Gorgias 'Logic' has paid little heed,

lies in this that practically meaning must be transferred by verbal symbols, and conveyed in 'propositions'. But such propositions must always be ambiguous. They *may* mean whatever they can be used to mean. They are blank forms to be filled up with concrete meanings according to requirements. They afford, therefore, no security that the meaning which they are *taken* as conveying is identical with that which they were *intended* to convey. Until we have assured ourselves of this, it is vain to discuss 'the meaning' of the assertion, or to attempt its logical evaluation. Consequently the logical treatment of meaning is *meaningless*, until these psychological preliminaries have been settled.

What now is the way in which these matters have been treated by 'Logic'? It has made a series of monstrous abstractions, which break down as soon as they are applied to the facts of actual knowing.

(1) It has abstracted from context, i.e. from the *actual* context in which the assertion was made and tried to convey its meaning, as being psychological and irrelevant. This is a gigantic blunder, after which it is vain to seek to provide for the 'logical' relevance of context. For the 'logical' context never recovers its full concreteness, and so can never guarantee to 'Logic' a knowledge of the actual meaning. (2) It has framed the abstraction of 'the logical meaning' of the assertion, which it has usually conceived also as existing *per se* and independently of human assertors, and taken it for granted that it could be used as the standard to which to refer the meanings meant and understood. But in actual knowing 'the meaning' is *the* problem. It is not what we may presume, but what we must discover. It is an ideal to be reached, and not a presupposition to be started from. It does not exist; it has to be made—by mutual understanding. Moreover, for the reasons given above, the abstract 'meaning *per se*' of the assertion reduces itself in practice to the *average meaning* of a form of words which will *probably* be used in a certain sense, but may be used in any sense in which any one can convey (or try to convey) *his* meaning. 'The meaning', therefore, is infinitely *ambiguous*.[13] And hence to operate with it is always hazardous and often false. (3) In abstracting from the assertor's actual meaning, 'Logic' always runs the risk of excluding the real point. For this may lie in some of the 'irrelevant' psychical details of the actual meaning, whose essence may not lie in its plain surface meaning, but in some subtle innuendo.

Moreover, even where 'the logical meaning' does not miss the real point, it nearly always fails to convey the *whole* meaning. For the actual meaning is fully concrete, and contains much more than it conveys, and infinitely more than 'the logical meaning' of the form of words. The latter, therefore, is always something *less* than what was actually meant, and fails to express it fully. For the appropriateness of an assertion always depends in some degree on the personality of the assertor and the particularity of

the occasion. (4) 'Logic', in abstracting from the psychological problem, has burked the whole question of the communication of meaning. It has assumed that there is *only one* meaning with which it need concern itself, and that every one must understand it. In point of fact, there are usually two or more meanings concerned in every question. For the assertor commonly fails to convey his meaning, or his whole meaning, and his assertion is taken in a meaning different from that in which it was meant. There are, in consequence, at least as many 'meanings' as parties to the discussion, and the 'logic' which is concerned only about 'the meaning' is troubling about the non-existent. Whereas if it were recognized that what is called 'the meaning' is an indication, but not a guarantee, of the real meaning, and that the meaning understood may not be that intended, we should take more care to secure a real identity of meaning before beginning to dispute, and so the chances are that many 'logical questions' would never arise.

(5) Lastly, 'Logic' has assumed not only that 'the meaning' of an assertion can be ascertained without regard to the psychological facts, but also that it can be quite dissociated from the personality of its assertor. It becomes, consequently, a matter of indifference whether it was made by A or by B, nay even whether or not it was (or could be) made by any one. Whoever made it, 'it' is equally true, even though A was a fool or a crank asserting it at random, and B a great authority who knows the subject. Our common-sense accordingly protests against this paradox, and urges that the status of the assertor must make a difference to the assertion. And the practice of science would seem to bear this out. The logical value of an assertion is constantly treated as conditioned by the qualifications of its author. If these are adequate, it is received with respect; if they are nil, it is treated as scientifically null and disregarded. Thus dozens of sailors have sighted sea-serpents, but the testimony of the two competent naturalists on the *Valhalla* is far more likely to shake the incredulity of zoologists.[14] On the other hand, when Prof. Curie reported the extraordinary and unparalleled properties of radium, his assertions were at once accepted. The solution of the paradox lies of course in the falsity of the assertion that when two persons 'say the same thing' (i.e. *use the same form of words*) they make the same assertion. They really make *two* assertions, which may (or may not) subsequently be made to coincide and identified with the (usual) meaning of the proposition they use. But they *need not mean* the same thing, nor understand alike. They will probably make the assertion on different grounds, and will certainly have different motives and aims. What *their* assertion means will vary accordingly. And so will its logical value, which here plainly shows itself as dependent on psychological circumstances. Why then should 'Logic' stubbornly blind itself to these facts, and

insist on cutting meaning loose from its psychological roots, and on confounding in its abstract 'forms' cases which all actual knowing must discriminate? The practical convenience and rough adequacy of the easy-going convention that 'the meaning' may be taken as identical with the meanings meant and understood, is surely no defence an *intellectualistic logical theory* can plead against the charge of false abstraction and inadequate analysis.

As regards judging, it may suffice to suggest that 'the judgment' is as dangerous an abstraction as 'the meaning' which is ascribed to it. For what is called *one* is usually *many*. It follows, moreover, from our last discussion both that every judgment, in its actual use, is an intimately personal affair, and that its personal aspects often have (and always may have) important bearings on its logical value. No judgment could come into being, even in the world of thought, if some individual mind were not impelled by its total psychical contents and history to affirm it upon some suitable occasion, and to stake its fortunes on this personal affirmation. And even after it has come into being, its logical status is still vitally dependent on its relations to the minds which entertain it. The judgment, therefore, essentially presupposes a mind, a motive, and a purpose. To 'depersonalize' it is to do violence to its concrete nature. Similarly, its 'objective validity' is not a question of the interrelation of absolute static truths in a supercelestial sphere. It depends on its adaptation to our world and its congruousness with the opinions and aims of others. Hence every recognition of a judgment by others is a social problem, often of a very complicated character.

To bring out the unreality of the logician's conception of Judgment, we may note also that 'Logic' is always held to exclude the evaluation of questions and commands. And yet are not postulates often the basis of our reasonings, and are not all real judgments the implicit or explicit answers to a question? Does any sane person knowingly argue about what is universally admitted? Ought it not to be truly 'illogical', then, to sever the connexion between things which belong so closely together? To confine Logic to categorical statements in the indicative mood, is to abstract at one blow from the sense and actual use of judgments. Contrast with this an intellectualist view of the question's function. Prof. Bosanquet, e.g. is "disposed to doubt whether we can interrogate ourselves" otherwise than rhetorically, and urges that questions which we cannot answer and know that we cannot answer cannot be "genuine questions." He concludes that "thus a question cannot be an act of thought as such, just as a lie is not, and for the same reason, that it is not an attitude that the intellect can maintain within itself. . . . It is a demand for information; its essence is to be addressed to a moral agent, not ourselves, in whom it may produce action" (*Logic*, i. p. 36).

Clearly, however, this whole paradox rests on the abstraction of truth from its consequences, on the divorce of 'thought' from its psychical con-

text. The question is taken as unrelated to anything that precedes and follows. If this is done, only two cases remain; we ask ourselves a question to which we either do, or do not, know the answer. And of course the question is in both cases futile. In actual knowing, however, we only ask ourselves questions where, though we do not yet know the answers, *we want to know them and are willing to take steps to find them out*. A question, therefore, is logically futile only if we decline to *act* on it, and this would be equally true of a question addressed to others, if they, similarly, did not react upon it. Really, therefore, the putting of questions is, as the Greeks well knew, a natural and necessary process as a preliminary to the satisfaction of a cognitive need, and one which may be of the greatest value, if the right questions are clearly formulated.

§10. Lastly, not so much because further illustration should be needed, as in order to force a clear issue, let us consider one more case, that which has been most disputed, viz. that of reasoning openly inspired by desire, i.e. of a conclusion affirmed because we should like it to be true. Is it always true that we attain truth only by suppressing desire? Take the familiar argument: *The world is bad, therefore there must be a better*. It all rests on the desire for good and the postulate of perfection. Now if postulation is as such invalid, and desire a mere obstacle to truth, it clearly follows that this argument is hopelessly illogical; which is accordingly what intellectualist logicians have everywhere maintained.[15] A bad world is logically evidence *against*, not *for*, the existence of a better.

Now, against such abstract and a priori notions of what is good reasoning, we may lay it down that good reasoning is that which leads us right and enables us to discover what we are willing to acclaim as truth. And so tested the desire-inspired reasoning may clearly often be the better. It may prompt to more active inquiry, to keener observation, to more persevering experiment. The logician who declares *de non apparentibus et non existentibus eadem est ratio*, who declines to look for what he wants but does not see, who does not seek to penetrate beyond the veil of appearances, is, frankly, an ass. He frustrates his avowed purpose, the discovery of truth, by debarring himself from whatever truth lies beneath the surface. His self-approbation, therefore, of the heroic self-sacrifice of his volitional preferences to 'objective truth' which he 'feels himself bound' to commit, is simply silly. What right, indeed, has he even to 'feel bound'? Does not the phrase betray the emotional origin also of *his* attitude to truth? He accomplishes the sacrifice of 'personal preference' to 'objective truth' by dint of an emotional desire to mortify himself (or, more often, others), the satisfaction of which appears to him as a good. How then is he other or better than the voluntarist who makes bold to postulate, and verifies his anticipations?

Moreover, if we supply the missing premiss in the contention of the

intellectualist, we find that it must take a form something like this, that it is *wrong* to anticipate nature, to go beyond what you can see, wicked to try whether the apparent 'facts' cannot be moulded or remoulded into conformity with our desires. He must say 'it is *wrong*'. He cannot say 'it is impossible'. For it is constantly done, and with the happiest effects.

If now we ask, *Why wrong?* we force the intellectualist to reveal the full measure of his prejudice. To defend his assumption he must do one of two things: (1) He may fall back upon his own feeling of the aesthetical or ethical impropriety of the voluntarist's procedure. But if so, his objection ceases to be purely logical. It may be declared to be only his idiosyncrasy, and be met by the retort—"but it does not seem improper to me. I do not, will not, and cannot share your devil-worship of disagreeable fact and unwelcome truth. I do not, cannot, and will not call a universe good which does not satisfy my desires, and I feel strongly that it *ought* to do so. Whether it does, or can be made to do so, I do not know as yet; it is one of the chief things I am staying in the universe to find out. If (*a*) it does, or can, then my desires are to be regarded as a sound, logical indication of the nature of reality and a valid method of penetrating to its core. If (*b*) it does not, I may have, no doubt, to admit unwelcome truths and unpalatable facts. But I shall do so provisionally, and with a clear intention of abolishing them as soon and as far as I am able. If (*c*) it sometimes does, and sometimes not, why then I am entitled, nay bound, to try *both* methods. I have a right both to treat my wishes as clues to reality, and to subordinate them on occasion to facts which are too strong for me. And I observe that (whether you approve or blame) this is what, in fact, men have always done."

If (2) the intellectualist tries to find something more objective than his instinctive feeling of the wrongness of the voluntarist's procedure, what resource has he? Must he not appeal to the consequences of the two methods? Must he not try to show that the consequences of submission are always, or mostly, good—those of postulation always, or mostly, bad? But can he show this? Notoriously he cannot. And in either case has he not used the pragmatic test of logical value?

It is vain, therefore, to seek an escape from the conclusion that actual thinking is pervaded and conditioned through and through by psychological processes, and that Logic gains nothing, and loses all vitality and interest, all touch with reality, by trying to ignore them. To emphasize this is not, of course, to deny that for logical purposes some psychological conditions may sometimes be irrelevant. Thus in using concepts it is generally possible to abstract from the particular nature of the psychological imagery. The reason is that identity of meaning overpowers diversity of imagery; if this were otherwise, the use of concepts would be impossible. Again an error, say of counting, may be psychologically a very complex fact; it may,

nevertheless, be logically a very simple error. By my counting 2 and 3 as 6, there may hang a lengthy tale; but for the logician it may be enough to say that the result ought to have been 5. It should be observed, however, even here, that the logical description of this process as an 'error' involves an appeal to psychology; the error could not be recognized as such but for my capacity to correct it, or at least to admit the validity of processes which enable others to correct it. If I were psychologically incapable of counting 2 + 3 as other than 6, I could not recognize my 'error', a 'common' arithmetic would disappear, and there would remain no way of deciding which process was counting and which miscounting, but the experience of the respective consequences and the slow test of survival.

§11. Whenever, then, the logician abstracts from the concrete facts of reasoning, he should do so with a consciousness of the nature and dangers of his procedure. He should feel that he may have left out what is essential, that he may have failed to notice the actual meaning of the thought he examined, and have substituted for it some wholly different imagination of his own. The proposition which he solemnly writes down an 'error' or a 'fallacy' may not have been a prosaic affirmation at all; it may have been poetical hyperbole or an hypothesis, a jest or a sarcasm, a trap or a lie. He will, therefore, get a very little way into the analysis of actual thinking if he declines to recognize that in its actual use the same form of words may serve all these purposes, and cannot be treated logically until he has found out what its actual meaning is. A lie is, I presume, a proposition which claims truth like any other. But the claim is for export only; the liar himself knows it to be 'false', and has rejected the claim, even though he has persuaded all the world. There is no 'lie' unless there is deception, and no deception unless there are deceivers and deceived. The difference of the persons concerned, therefore, is essential. How then can 'the meaning' of such a proposition be represented as single and simple? How can its logical status even be discussed without going into these facts? Does it not follow that Formal logicians have no right to their habit of speaking of 'the meaning' of a proposition as if it were a logical fixture? *The actual* meaning is always a psychical fact, which in the case of an ambiguity intended, implied, or understood, may be many. The 'logical' meaning is potential; it is at best the *average* meaning with which the proposition is most commonly used. It is only more or less probable, therefore, as the interpretation of an actual judgment. And to build a system of apodictic doctrine on foundations such as these what is it but to build a house of cards?

It would be possible to show in this manner, and with the utmost fulness and unlimited examples, that vastly more than the text-books recognize is really relevant to Logic, that every logical process, conception, method, and criterion springs naturally and continuously out of psycho-

logical soil, and is essentially a *selection from*, and *valuation of*, a more extensive psychical material. But enough has probably been said to suggest that Logic can take nothing for granted, and itself least of all. In view of the complete dependence and reliance of every logical process on the psychical nature of man in general and of men in particular, in view of the manifest adjustment of every logical principle to the needs of human life, is it not high time that *a systematic doubt were cast on the assumption that the theory of knowledge must abstract from the Personality of the knower?*

§12. It should now be clear what is the meaning, the ground and the aim of our Humanist 'psychologism', but we may clinch the argument by supplementing it negatively by a proof that the antagonistic conception of an 'independent' Logic (1) involves unintelligible and self-contradictory misdescriptions; (2) assumes a standpoint which it cannot justify, and (3) is so unable to deal with actual knowing, that (4) it ends in scepticism and intellectual collapse. It will be seen, in short, that the intellectualistic treatment of Logic "necessarily conducts to a complete *débâcle* of the intellect."[16]

It has already been implied that it is usual to formulate the conception, and to expound the claims, of Logic in an anti-psychological way radically opposed to ours. One still hears of Logic as the science of 'pure' thought, endowed with a standpoint and nature of its own, which is 'free' and 'independent' of man and human psychology, and anything it may do or say about such merely human processes as 'willing' and 'feeling', as a science which by 'depersonalizing' itself has risen to communion with the eternal and immutable Ideal, and of course cares not one jot about our personal interests or attitude towards truth.

These epithets, however, are chiefly ornamental, and merely serve to curry favour for the assumptions on which it is attempted to rest the science.

(1) The notion of 'pure thought', for example, must not be pressed. It is not a fact of actual knowing, but a barefaced fiction, which can at most be defended as a methodological necessity for the purposes of intellectualist logicians. Its fictitious nature has nowadays to be avowed, whenever it is directly challenged. Even Mr. Bradley "agrees" with Prof. Dewey, that "there is no such existing thing as pure thought,"—it is true only just before proceeding to declare that if "there is to be no such thing as *independent* thought, thought, that is, which in its actual exercise *takes no account of the psychological situation*, I am myself in the end led inevitably to scepticism. The doctrine that *every judgment essentially depends on the entire psychical state* of the individual, and derives from this its falsehood or truth, is, I presume, usually taken to amount to complete scepticism."[17] 'Pure thought', then, is not to be the same as 'independent'. But what is 'pure' thought *pure from*? Psychological contamination? If so, will it not coincide with 'independent' thought? For that too "takes no account of the psychological situation." But

if so, has not an imperious need of Logic been equated with a non-existent? The puzzle grows more perplexing when we recall the pronounced emotionalism which is somehow combined with Mr. Bradley's intellectualism, and to which Mr. Sturt has lately drawn attention.[18] How can an intellect so emotionally conditioned be either 'pure' or 'independent'?

The truth, however, seems to be that the sacrifice of 'pure thought' goes greatly against the grain of intellectualism. Only constant vigilance can prevent it from wriggling itself back into the claim to be an actual fact, and whether intellectualism can afford wholly to dispense with it, especially in its arguments about 'useless' knowledge, seems more than doubtful.

(2) The 'independence' of Logic and its standpoint is in every way a most difficult notion. It is hard to understand, harder to derive, hardest to justify. Nay, in the end it will turn out so anarchical as to be fatal to the theory that entertained it. For the present, however, it may suffice to point out the difficulty of ascertaining the meaning of a word which is constantly employed in current discussions, and never defined. Its meaning appears to vary with the work it has to do. In its most rigorous sense it describes the iniquity of pluralism in claiming 'independence' for its reals, the impossibility of which provides an a priori refutation of this metaphysical 'heresy'.[19] In this sense it means apparently 'totally unconnected with'. A more lenient sense is in vogue when intellectualism has to defend its abstractions against Humanist attacks. For in that case we learn, e.g. that every Logic is 'independent' of Psychology, nay, that every well-conducted theoretic truth preserves a virtuous independence. Similarly we are told by 'realists', that in the act of knowing the object of knowledge is quite 'independent' of the knowing act. And, finally, Mr. Bradley sometimes equates it with 'relative freedom'![20] It is clear that if these ambiguities were done away with, either the argument about the impossibility of pluralism, or that about the independence of pure thought and Logic, would have to disappear from the armoury of our intellectualists.

(3) The 'depersonalization' which is regarded as characteristic of an 'independent' Logic is usually defended by the example of Science, which is said to ignore all human interest as irrelevant. But this assertion is hardly true. The abstraction practised by Science is *not* analogous to that advocated for Logic. It is *not* true that Science as such abstracts from *all* human interest. It does *not* abstract from the scientist's interest in his particular science. And this is still a human interest. For it is what generates the science, and incites men to its study.[21] Psychologically it represents, not an *absence*, but a *concentration* of interest, such as is demanded, more or less, for the attainment of every purpose, and for the satisfaction of every interest. And it can occur *only in a highly developed personality*. The 'depersonalization', therefore, which is postulated for Logic obtains no

support whatever from scientific procedure. And we shall soon see how ill it serves the ends of 'Logic'.

(4) The analysis of psychic process into 'thinking', 'willing', and 'feeling', in order to justify the restriction of 'Logic' to the first and the exclusion of the two latter, appears to be an unwarranted piece of amateur psychologizing. For the analysis in question is valuable only as a rough reference for popular purposes, and is really a survival from the old 'faculty' psychology. Scientifically its descriptive, like its explanatory, value is *nil*. No one nowadays seriously supposes that a soul can actually be put together out of 'thought', 'will', and 'feeling', or that this 'analysis' represents its actual genesis.[22] For in actual knowing all three always co-operate. There is no thought-process which is not purposively initiated and directed (i.e. more or less 'willed'), or which is not coloured by feelings and emotions. It is false, therefore, to conceive 'thought' in abstraction from 'will' and 'feeling', if we intend to examine actual knowing. But it is just this intention which intellectualism leaves in doubt. It is hard to see, therefore, why a 'thought', which has abstracted from purpose, interest, emotion, and satisfaction, should any longer be called thought at all; at any rate, it is no longer human thought, and can have no relation to human life.

But the unfortunate fact remains that all these phrases have long been taken for granted, with little or no warrant or criticism. They are traditionally part and parcel of an 'independent' Logic *which has begged its 'standpoint'*.

§13. Formally this standpoint is bafflingly indeterminate. It is neither consistently descriptive nor consistently normative, but either, or both, as suits the occasion. Sometimes it appeals to what logical procedure actually is, sometimes to what it ideally ought to be; i.e. what *by us* would be called psychological and logical considerations alternate in the most confusing way. In its own phraseology this confusion is cloaked by its conception of 'the logical Ideal', which can be represented either as what human thought naturally aspires to, or as what controls its wayward vagaries.

Let us consider a few representative examples. Mr. Bradley prefaces his *Principles of Logic* with the confession that he is not sure where Logic begins or ends; but no attentive reader can fail to see that his 'Logic' begins in Psychology and ends in Scepticism. It is, moreover, just because the standpoints of fact and of validity are so inextricably mingled that nothing can save his 'Logic' from surrender to Scepticism, except a desperate appeal to metaphysics, the aid of which *Appearance and Reality* was subsequently to prove illusory.[23]

Prof. Bosanquet seems to incline more distinctly to the descriptive standpoint. He declines to call Logic normative; but calls its object 'self-normative'.[24] The preface of his *Logic* tells us that "the conception of Logical Science which has been my guide is that of an unprejudiced study of

the forms of knowledge in their development, their interconnexion, and their comparative value as embodiments of truth." In his discussion with me he calls it "the science which considers the nature of thought as manifested in a fully self-consistent form."[25]

Still, even here, both sides are observable. A 'study of the forms of knowledge', and of 'the nature of thought', sounds like a purely descriptive undertaking. But the notion of 'comparative value' is as distinctly normative; so is that of a fixed ideal or 'system' which claims to regulate and control the natural development of cognitive procedures, quite irrespective of their use as the means to the ends of human knowing.

§14. This whole conception of the logical standpoint is, however, open to the gravest objection. *Qua* descriptive, it either instigates Logic to poach on the preserves of Psychology, and to interfere with its functions, or, if you please, to become itself Psychology. In the latter case it must become bad or ignorant Psychology. In the former case it must either *prohibit* Psychology from describing cognitive processes, or *duplicate* the psychological descriptions. We should get, that is, a twofold description of the same events, the one dubbed 'Logic' and the other 'Psychology'. One or the other of these would surely be superfluous or mistaken. Or if both of them could somehow (e.g. by a reference to the different purposes of the two sciences?) be maintained, it would become necessary to consider their relation to each other. This would be just as necessary, and much more difficult, when both sciences are conceived as descriptive, as when one is conceived as normative. For the attempt to adjust their relations would have to start from an open conflict about the ground each was to cover.

Moreover, even as descriptive Psychology, this Logic would be defective. It would either have to ignore the 'willing' and 'feeling' indubitably present in cognition, or to insist on describing them, as far as its purposes required. In the former case it would be certain, in the latter it would be probable, that the description would be incomplete. For the descriptive interest would be restricted by the logical purpose, and in any case, would not extend to the whole psychical context.

But surely, when we describe, we should try to describe completely, without obliterating psychical values and without any *arrière pensée*. The omission of any feature which *de facto* accompanies knowing demands caution and an explicit justification. For how can it be taken for granted that anything is unessential? The context of any reasoning extends indefinitely into the psychological: the actual meaning always depends upon the context, and when we abstract from any of it, we take a risk. Before any train of thought is capable of logical analysis, it must somehow be determined what features in it are important and vital, and what unimportant and unessential. But how can the logician determine this, without the aid either

of Psychology or of experience? There is no prospect then that his descriptions will be adequate, either logically or psychologically.

Even though, therefore, some one should suggest as a compromise that Logic and Psychology should both describe the actual psychic process, but that Logic should have a monopoly of the cognitive features, the compromise would be equally futile and intolerable. For if so, who or what is to decide which is which, and how much of the whole is logically relevant? What if the parties disagree, and the subjects decline to be separated?

Finally, in assigning to Logic a descriptive function, a serious concealment has been practised. Its study of cognitive process assuredly was *not* 'unprejudiced'. It has made *de facto*, but secretly and unconsciously, very definite and peculiar assumptions as to the nature of the logical standpoint. A big encroachment has been made on the domain of Psychology, which has been robbed of the most valuable portion of its territory. It has been assumed (as we saw in §4) that Psychology has no right to treat cognitive values, and must perforce content itself with what is left over after Logic has claimed all it has a mind to for its province. And this despoliation has been committed by sheer importunity, without the least pretence of a rational delimitation of scientific frontiers, and with no attempt at an equitable arbitration of the dispute!

§15. The results of this monstrous injustice are not slow to show themselves. First of all, Psychology is reduced to absurdity, to the care of the shreds and dregs of a disrupted soul. And then, by a thoroughly deserved Nemesis, the unjust abstraction made by Logic ends in her own paralysis!

The first stage of this process, the arbitrary stultification of Psychology, may best be studied in Prof. Bosanquet's Aristotelian Society papers;[26] the second, the suicide of 'independent' Logic, in Mr. H. H. Joachim's book, *The Nature of Truth*.

"Psychological process," says Prof. Bosanquet, "when it differs from the process which is the object-matter of logic, differs by being inarticulate, circuitous, fragmentary. It is the logical process broken up and disguised," "a Glaucus," whose divine original, however, is "never found typically perfect in actual psychological process."[27] Thus "logical process is the psychological process in its explicit and self-consistent form," freed from the "interruptions" and "irrelevance" of "purely psychical disturbances."

And so the 'self-normative', 'independent' Logic, "dropping out abstract psychical processes," haughtily "goes forward on the path of concrete fulfilment or individuality"[28]—to what end will presently appear.

Now the division of territories propounded in these words should certainly secure to Logic the most brilliantly prosperous career. It appears to give Logic every advantage, it reduces Psychology to such pulp that its voice can scarce be heard in the Council of the Sciences. One hardly dares to

point out in remonstrance that Prof. Bosanquet's "psychological process" with "pure" and "mere" conditions differs radically from the concrete psychical process of Humanist Psychology, and is obviously incapable of performing the functions of the latter. It is conceived as a miserable abstraction, not (as is legitimate in a special science) as regards limitation of standpoint, but as regards the content it is permitted to treat, and is almost deserving of the contempt poured upon it. For what is it but a mere rubbishy residuum, all that is left behind when its values have been extracted from the actual psychic process, and its life has been extinguished?

Compared with this "misshapen Glaucus" postulated by logical theory, almost anything may claim to be concrete. Even Prof. Bosanquet's 'logic-process', which has been allowed to select all that seemed to be of value, and to abstract only from the merest and most worthless dross. So at least it seems, in the triumphant self-assertion of an 'independent' Logic. It seems almost fantastic to suggest a doubt whether after all 'Psychology' has been despoiled enough, whether after assigning to the 'logical' the whole purposiveness of psychic process and leaving the psychological a purposeless chaos, Prof. Bosanquet has not abstracted from something which was needed to make thought truly purposive.

§16. Meanwhile, what can we reply? Nothing, it is to be feared, our intellectualist logicians will deign to listen to.

We shall protest in vain that the 'mere' or 'pure' psychological conditions, which Prof. Bosanquet flung aside as worthless on the rubbish heap, are pure fictions which bear no resemblance to the psychical processes of actual knowing, that we never meant to relate *them* to Logic, that what we meant was not this fantastic abstraction, but the most concrete thing imaginable, viz. the actual psychic process in its all-inclusive activity, and with nothing at all, however worthless it might seem, abstracted from. We shall observe in vain that however 'concrete' the logic-process may appear by comparison with the artificial abstraction of the 'merely psychological', it is admitted to be an ideal never realized in actual thinking, that therefore it *has* abstracted from something, and that it remains to be seen whether that was really as unessential as was asserted, or whether an immense abstraction has unwittingly been made, which in the end proves ruinous to Logic. We shall ask in vain how Logic has arrived at a standpoint which gives it such crushing superiority over Psychology, and entitles it to take and leave whatsoever it likes, without condescending to give reasons for its procedure.

We shall ask all these questions vainly, because Logic is 'independent', nay autocratic. It gives an account of its self-normative procedure to no man or science. "It can only be judged by itself at a further stage," its friends haughtily declare.[29] We must therefore perforce let it go its own way. It cannot be refuted; it can only be developed.

§17. Let us therefore follow the developments of 'Logic'. Having successfully maintained her right to 'depersonalize' herself, having got rid of the 'merely psychological' encumbrances of her 'Glaucus', her 'old man of the sea', she should be able to soar to the illimitable heights of an infinite 'ideal' of a "timelessly self-fulfilled," "all-inclusive, significant whole," "whose coherence is perfect truth."[30] She proceeds to do so, until only our deep-seated British respect for what we cannot understand hinders us from declaring that in her Hegelian disguise she has become wholly unintelligible, and that clouds of German metaphysics have rendered her invisible in her ascension.

But just as we had despaired of ever seeing her again, to our amazement there ensues a catastrophe which brings her back to earth with more than Icarian suddenness, and in as completely shattered a condition.

There was an error in her calculations which has brought about her fall. Or rather Error was *not* taken into her calculations, when she assumed her standpoint, discarded the merely human as 'merely psychological', and constructed her ideal. 'The Ideal' does not admit of Error: and yet on earth Error impudently takes the liberty to exist. It is, of course, a mere illusion, but its persistent phantom yields not to the exorcisms of Logic.

The situation must be set forth in the words of one who has seen the vision, and suffered its *dénoûment*: our own would be suspect and inadequate.[31] "The confused mass of idiosyncrasies," we are told, which are "my and your thinking, my and your 'self', the particular temporal processes, and the extreme self-substantiation of the finite 'modes', which is error in its full discordance: these are incidents *somehow* connected with the known truth, *but they themselves, and the manner of their connexion, are excluded from the theory of knowledge*,"[32] which "*must* rule out as irrelevant *some*—perhaps *most*, but certainly not *all*—of the temporal and finite conditions under which truth is known." "Truth, beauty, and goodness" (for all the ideals as conceived by intellectualism must break down in the same way when they try to transcend their reference to man) "are timeless, universal, independent structures; and yet it is also essential to them to be manifested in the thinking of finite subjects, in the actions and volitions of perishing agents."[33] Hence Error is "unthinkable," "a declaration of independence, where that which declares is nothing real, and nothing real is declared."[34]

But why should not 'Logic' free herself from these embarrassments by cutting the last thin thread that attaches her to an earthly existence and a human function which are infested with 'merely psychological' accidents and idiosyncrasies, and vitiated by the errors of human beings of which she ought surely to have divested herself when she proceeded to 'depersonalize' herself? Why do these human trappings cling, like a shirt of Nessus, to the naked Truth? Can it be that 'Logic' could not 'depersonalize' herself completely, nay, that her effort was a sheer delusion?

Mr. Joachim makes answer.[35] Logic "must *render intelligible* the dual nature of human experience. . . . It must show how the complete coherence, which is perfect truth, involves as a necessary 'moment' in its self-maintenance the self-assertion of the finite modal minds: a self-assertion which in its extreme form is Error. It must reconcile this self-assertive independence with the modal dependence of the self-asserting minds. . . . Otherwise human knowledge remains, for all we can tell, unrelated to ideal experience."[36]

In other words, when 'Logic' commenced her nuptial flight towards 'the Ideal', she quite forgot that after all human forces raised her, that all her beauteous visions were conceived by the eye of human minds, and that she has repaid our devotion by disavowing her creators.

The natural result is sheer, unmitigated, inevitable, and irreparable contradiction, as Mr. Joachim most honourably recognizes. Logic is met by "demands which both *must be* and *cannot be* completely satisfied."[37] To satisfy them completely, complete truth would have to be manifest to itself. Whereas what we can conceive ourselves as attaining is only complete truth *manifest to us*. And as manifested in human truth the opposition of subject and object persists; our knowledge is always thought *about* an Other: "the opposition of the thought and its Other is apparently vital." It cannot attain to union with its Other; and so the significant Whole, cleft by a self-diremption, falls into halves.[38] The whole theory, therefore, "falls short of the absolute truth manifest to itself."[39] The "theory of truth, based on the coherence is not itself true *qua* coherent."[40] It is "not only *de facto* unaccomplished, but is impossible by the very nature of the case."[41]

And so Mr. Joachim, though he tries to soften the effect of his idol-breaking blows for the benefit of his friends by protesting that their common theory is "*as true as a theory can be*,"[42] finishes up as a sceptic *malgré lui* amid the ruins of *all* the intellectualistic conceptions of Logic, and of his own 'Hegelian' metaphysic.

§18. Of a surety we did well to allow Logic to go on her way, and to be "judged by herself at a further stage," by her "approach to completeness and comprehensiveness."[43] Her *débâcle* has certainly approached completeness, and is quite comprehensible to us.

For there is nothing either new in her overthrow or obscure in its causes.

The Hegelian theory of knowledge and reality—for Mr. Joachim, taught perhaps by the negative outcome of *Appearance and Reality*, has rightly renounced the pretence of salving Logic by Metaphysics[44]—has broken down completely. It has broken down precisely as it was predicted that it must break down so soon as it was thought out consistently and to the end.[45] It has broken down precisely as every intellectualistic conception of Logic has always broken down, at precisely the same point and for precisely

the same reasons. It has not failed, assuredly, for any lack of ingenuity or perseverance in its advocates, who have left no stone unturned to save a hopeless situation, and could no doubt with ease have lifted the burden of Sisyphus to the summit of any hill of hell. But their labour was more than Sisyphean: they had, unfortunately, committed 'Logic' to a fundamental blunder. It has wilfully, wantonly, and of malice prepense abstracted from humanity. Instead of conceiving God as incarnating himself in man, it has sought God by disavowing and belittling man. And as a reward it has itself been terrified to death by an incredible monster—the creature of its own unhealthy nightmare!

In other words, it has fallen into a *χωρισμός*, a fatal separation between the human and the ideal which renders *both* unmeaning, but was rendered inevitable and irretrievable by its presuppositions as to the value of human psychology. Once our psychic processes are denied logical value and excluded from the nature of truth, we are playing with abstractions, even though we may not realize this until at the end our 'Ideal' is required to find room for our errors. Once we exalt the limited and relative, and merely 'pragmatic', 'independence' of truth, which remains safely immanent *within the sphere of human valuations* and can always be withdrawn and modified as our needs and purposes require, into an absolute and infinite 'independence' which entirely transcends our human experience, we have ascribed to truth the 'dual nature', which so perplexes Mr. Joachim, and can by no device be unified. For a dualistic chasm has been constructed between the human and 'psychological', and the ideal and 'logical'. No real relation can be established between them; all attempts at connecting them break down so soon as they are tested. Nor can any real theoretic progress be made. The utmost ingenuity only brings 'logicians' to the brink of the chasm. And that is 'nearer' to the other side only in an illusory fashion. It remains only to *postulate* a reconciliation of the discrepant halves of a knowledge which is rent asunder from top to bottom, by a supreme and mystic act of faith.[46] But as the jejune rationalism of the theory in question had previously prohibited all acts of faith, it has manifestly fallen into a pit of its own digging.

Or shall we rather say, of Plato's?[47] For he it was that first led the way into the pit into which, with a few despised exceptions, the whole company of philosophers has followed him, as patiently and submissively as a flock of sheep follows its bell-wether, and out of which no one has been able, and not too many have even tried, to escape.

Throughout the *Theaetetus*, for example, Plato has made the assumptions that 'knowledge' is of 'universals' and not concerned or connected with the fleeting and variable judgments of individual men about their personal experience, that thought and sense-perception are antithetical and hostile, that the logical concept is something wholly superior to and inde-

pendent of the psychical process (e.g. 152 D), and that the Protagorean suggestion, to start the theory of knowing from the actual knowing of the individual's perceptions is a proposal for the abolition of truth. No wonder after this that it becomes for him a serious 'contradiction' when A judges to be warm what B judges to be cold, seeing that 'it' cannot be both. But 'it' does not exist out of relation to the divergent judgments: 'it' stands in this case for *the problem of constructing a 'common' perception*; if the two 'its' are to be brought together into an 'objective' scheme of temperature, A and B must set to work to construct a thermometer, as to the readings of which they can agree.[48] Plato, therefore, has merely debarred himself from understanding the *de facto* genesis and development of our common world of subjective intercourse, and by starting with abstraction from the *personal* character of both judgments, he has manufactured a fallacious contradiction. Can we wonder after this that the Platonic theory of knowledge remains plunged in unmitigated dualism, and that in the end it has to be admitted (209) that 'knowledge' can never condescend to the particular and personal, and is unable to discriminate between Theaetetus and Socrates? For was it not pledged, *ex vi definitionis*, to leave out whatever part of reality concerns a '*this*', '*here*', and '*now*'? But instead of inferring from this impotence, and from the self-abnegation of an 'ideal' of knowledge which is not even ideally adequate, because it renounces the duty of knowing the individual perfectly *in its uniqueness*,[49] that there must be a radical flaw in a conception of knowledge which has led to this absurdity, what does Plato do? He proclaims the Sensible unknowable and unintelligible as such, attributes to all 'phenomenal' reality an all-pervasive taint of 'Not-being', and retains his Ideal Theory though well aware that it cannot cross the gulf between the truly Real and the Sensible![50] How very human are even the greatest of philosophers!

It would never, therefore, occur to us to be surprised that not only should the *Theaetetus* in the end leave the problem of error unsolved and confess to utter inability to say what knowledge is, but that the whole Platonic theory of knowledge should remain immersed in obscurity and contradiction. But one thing is clear, viz. that whoever had learnt the lesson of the *Theaetetus* could have predicted the failure of all intellectualistic epistemologies down to *The Nature of Truth*.

§19. And the remedy for this sceptical paralysis of Intellectualism? It is simple—so simple that it will be hard to get philosophers to look at it. But it cuts very deep. It demands a complete reversal of inveterate assumptions, and a re-establishment of Logic on very different foundations. We have merely to refrain from the twin abstractions which every intellectualistic logic makes, and which must, if carried through consistently, prove fatal to its very existence. These two assumptions, which have troubled us throughout, may now

be called (1) the *etherealizing*, and (2) the *depersonalizing* of truth, and together they effect the complete *dehumanizing* of knowledge.

(1) By the *etherealizing* of truth is meant the abstraction from the actual use and verification of an assertion, which is made in assuming that its truth is independent of its *application*. This really destroys its whole significance, although at first it seems to leave its 'truth' a matter of self-consistency and intrinsic 'coherence'. But if we try to take truth in this purely formal way, we identify truth with claim to truth,[51] and render the testing of claims extralogical. And it is then discovered that all reference to reality has been excluded,[52] that 'self-consistency' means nothing but a juggle with words whose meanings are presumed to be perfect and stable in their truth, and that the distinction between truth and error has become incomprehensible. Error (as contrasted with self-contradiction, which destroys the meaning wholly) is nothing inherent in the form of the judgment, but lies in a failure of its application. It is a failure of *our* thought to attain *its* object. And as our conception of 'truth' is determined by its contrast with error, to abstract from error is really to abstract from 'truth'. Hence a Logic which abstracts from error implicitly despairs also of giving an intelligible account of truth. It ceases at any rate to be a theory of real knowledge, and the formal 'truth', the semblance of meaning, which it verbally retains, no longer possesses relevance to human knowing.

(2) But the *depersonalizing* of truth deprives the Logic of Intellectualism even of this show of meaning. It makes abstraction from the meaning actually intended, from the purpose of the meaner. Now as every judgment is prompted and kept together by a purpose which forms the uniting bond between its subject and its predicate, *the purpose is logically vital*. It is also a concrete fact of an intensely personal kind, which ramifies indefinitely into human psychology. Hence it is often logically inconvenient, as complicating the situation beyond the powers of formal analysis. But to abstract from it, wholly and systematically, is to disintegrate the judgment. To do this destroys its intrinsic coherence, as well as its reference to real truth. It amounts to *a complete annihilation of meaning*.

It is difficult to suppose, therefore, that when intellectualist Logic fully realizes the situation to which its abstractions lead, it will continue to presume without trial that the full concreteness of psychic process is logical irrelevance, and that man is a negligible quantity in the formation of truth.

A reformed and rehumanized Logic, on the other hand, will flatly refuse to immolate all human knowledge, all fact, and all reality to intellectualist prejudices. It will conceive and value the old abstractions merely as instruments, as methodological simplifications, which may be freely used, so long as the *limits* of their usefulness are not overlooked, and their authority is not made absolute.

And here will be the rub. For these abstractions have been misconceived so long! It is such a time-honoured custom with philosophers to believe that 'universals' are loftier and more sacred than 'particulars', that their *formation* is not to be inquired into nor tested, that their value is wholly independent of their application, that they would subsist in unsullied excellence and truth, even though they never were, nor could be, used. It will take, therefore, generations for philosophers to convince themselves that the essential function of universals is to *apply to particulars*, that they are *actually true* only because, and when, they are used, that when they become inapplicable they become unmeaning, that their abstraction, therefore, from time, place, and individuality is only superficial and illusory, and that in short they are instruments for the control and improvement of human experience.

But will not the attempt to build knowledge on so untried and paradoxical a basis be fraught with unsuspected difficulties, and in its turn conduct us back to scepticism? Is it credible that so many generations of thinkers can have been mistaken in acquiescing in the unproved assertion of the good man, Plato, that Protagoreanism necessitates scepticism?

In view of the outcome of intellectualistic 'Logic', this menace of scepticism seems a grotesque impertinence, and it might be well to retort that even an untried basis was better than one which had been tried and found to be so self-destructive. But the threat has been used so often that it will hardly be relinquished all at once: so we had better face it. It is a mere bogey—a Chimaera summoned from the House of Hades to scare us back into the Labyrinth of the Minotaur. No proof has ever been vouchsafed of its contention. And seeing that Plato's genius has failed so signally to refute Protagoras, we may await with equanimity the advent of a greater man than Plato to confute the inherent Humanism of man's thought.

NOTES

1. The necessity of treating this subject from a Humanist point of view is evident. It was borne in upon me with peculiar force by two circumstances. The first was that the excellent articles on 'Pragmatism *versus* Absolutism', by Prof. R. F. A. Hoernlé in *Mind* (xiv. N.S. Nos. 55 and 56) seemed to imply a serious misapprehension of the conception of Psychology which we are bound to entertain. Such misapprehension, however, is so natural, so long as no formal treatment of the interrelations of Logic and Psychology is in print, that it seemed imperative to attempt its removal.

Secondly, being called upon to start a discussion before the Aristotelian Society, in which Professor Bosanquet and Dr. Hastings Rashdall also participated, I selected the question whether Logic can abstract from the psychological condi-

tions of thinking. The discussion which ensued will be found in the Society's *Proceedings* for 1905-6, and though it was rather at cross purposes, and on the whole illustrates only the difficulty philosophers have in understanding one another, it enabled me to realize what a radical difference exists between the Humanist and the intellectualist conceptions of these sciences. It seemed helpful, therefore, to discuss these conceptions, and so this essay is based in part on the 'symposium' of the Aristotelian Society.

2. See Prof. Case's article on 'Logic' in the *Encyclopedia Britannica* (10th ed. XX. 338) for a lucid exposition of this situation, with some excellent comments.

3. Cp. *Humanism*, p. 163.

4. No one, probably, has given greater currency to this fallacious notion than Mr. Bradley, by the sharp contrast he drew in his *Logic* (ch. 1. e.g. pp. 7, 8, and p. 526) between the validity of the 'idea' (= concept) and the psychical existence of the 'idea' (= mental image). It has, unfortunately, not been as extensively recognized that his remark in *Appearance and Reality* (p. 51), that "it is not wholly true that 'ideas are not what they mean', for if their meaning is not psychical fact, I should like to know how and where it exists," is, *inter alia*, a scornful self-correction.

Prof. Bosanquet (*Logic*, i. p. 5) declares that "in considering an idea as a psychical occurrence we abstract from its meaning"; but ibid. ii. p. 16 n., he advocates the remarkable doctrine that "when psychical images come to be employed for the sake of a meaning which they convey, *they ex hypothesi* are not treated as fact. And their meaning is not itself a psychical fact, but is an intellectual activity which can only enter into fact by being used to qualify reality." This is sufficiently oracular, and it would be interesting to hear the reasons *why* Psychology should be debarred from recognizing 'intellectual activities' as psychical facts.

5. *Arist. Soc. Proc.*, 1905-6, p. 249.

6. *Mind*, xiv. p. 473.

7. This should be '*claiming to be*'; for no one supposes that Psychology is concerned with the *decision* between conflicting claims to truth. Whether what claims to be true really *is* true, is admittedly left to Logic. Here, however, it seems to be argued that because Psychology cannot *decide* between claims, it may not even *register* them, nor describe cognitive values. I fear that Prof. Hoernlé throughout has not steered quite clear of the confusion between *claim* (psychological fact) and *validation* (logical fact), which so effectively vitiates the intellectualistic theories of truth. For the distinction see Essay v., especially §1.

8. This I take to be the meaning of Prof. Bosanquet's remarks in *Arist. Soc. Proc.* 1905-6, p. 238. He insists that it can either be 'adequately investigated within the bounds of logic proper," so as to leave nothing for "a further scrutiny of these phenomena as purely psychical disturbances," or that the common psychological element can make no specific difference in the logical interest. But how, as a logician, is he to know all this? And how if the psychologists dispute this claim? He is setting up as a judge in a case to which he is a party.

9. Some symbolic logicians, however, seem to regard thinking, i.e. judging and inferring, as so inherently psychological as to be extra-logical. Cp. *Formal Logic*, p. 377.

10. Cp. *Personal Idealism*, p. 70 n.

11. *Personal Idealism*, pp. 94-104. *Formal Logic*, ch. x. §§8, 10.

12. *Principles of Logic*, p. 264.

13. Thus the assertion 'Smith is red-haired' has as many 'meanings' as there are past, actual, and potential 'Smiths', of whom it can be (truly or falsely) predicated, and occasions on which it can be made.

14. Cp. *Nature*, No. 1914, p. 202.

15. *Qua* human they have, of course, not infrequently relapsed into the postulatory way of reasoning. Thus it is a favourite inference from the fact that all the parts of the world are imperfect, that the whole must be perfect. But if in this case it is legitimate to argue to the ideal from the defects of the actual, why not in others?

16. Captain H. V. Knox in *Mind*, xiv. p. 210. Cp. *Formal Logic.*

17. *Mind*, xiii. p. 309 n. Italics mine. We learn from this amazing passage that it is complete scepticism to take complete account of the facts in a cognitive procedure, and that if we will not deliberately falsify them, we are doomed to end as sceptics! It is surely strange that such falsification should be a necessary preliminary to the search for truth, and one is tempted to reply, that if 'Logic' demands this falsification, then the sooner the conception of Logic is amended the better. But it is evidently Mr. Bradley who is predestined to scepticism; every theory of Logic he touches turns to scepticism in his hands, and even when he flees to metaphysics he fares no better (cp. Essay iv. §3). Probably the peculiarity is, in his case, psychological.

18. *Idola Theatri*, ch. v. §§4-7.

19. *Appearance and Reality*, ch. x.

20. *Mind*, xiii. p. 322, and cp. Essay iv. §9 s.f.

21. This remark, of course, is not inconsistent with the pragmatic doctrine that all science is ultimately useful. For it refers only to the immediate psychological motive.

22. Cp. Essay iv. §10.

23. Cp. Essay iv. §3. It need not, of course, be denied that nevertheless Mr. Bradley's *Logic* is a great work, which has exercised a well-deserved influence on English thought. But its defects are so glaring that its influence has been very mixed. The sort of thing complained of may be illustrated, e.g. by comparing Mr. Bradley's criticism of Mill's conception of induction with his criticism of the syllogism. When he objects to the former that induction is not proof, his standpoint is clearly that of validity. But when he protests that the syllogism is not the universal form of (*de facto*) valid reasoning, and gives 'specimens of inference' which are not syllogistic as they stand and rest on relations evident to us on empirical and psychological grounds, has he not plainly passed over to the standpoint of description of the actual?

24. *Arist. Soc. Proc.* 1905-6, p. 263. This looks suspiciously like an attempt to run with the hares and to hunt with the hounds. At any rate, it involves the 'depersonalization' we have objected to, and ignores the fact that logical norms are values for *man*, and the offspring of our interests.

25. L.c. p. 237. He gives as an alternative to this, "as manifest in the endeavour to apprehend truth." But it would appear that, even in these definitions, Logic has not succeeded in manifesting herself in a fully consistent form. For even if we make explicit what is presumably intended, viz. that they take 'truth' as = 'the fully self-consistent form' of thought (an essentially formal view which seems to render it a wholly intrinsic affair of thought, and to rule out all testing of our predications on the touch-

stone of reality), the two definitions cannot be made to coincide. For 'the *endeavour* to apprehend truth' adds a consideration wholly extraneous and alien to the formal self-consistency of thought, and one, moreover, which is plainly psychological.

26. L.c. pp. 237-47, 262-5.
27. L.c. pp. 239, 240.
28. L.c. p. 265.
29. Prof. Bosanquet (l.c. p. 265).
30. H. H. Joachim, *The Nature of Truth*, pp. 169-170 and passim.
31. Ibid. pp. 167-8. For further selections see Essay vi., especially §§2, 3.
32. Italics mine, cp. p. 168 n. 2.
33. L.c. pp. 163.
34. Ibid.
35. L.c. pp. 170-1.
36. L.c. p. 172.
37. L.c. p. 171. The italics are Mr. Joachim's.
38. L.c. pp. 171-2 (in substance).
39. L.c. p. 178.
40. L.c. p. 176.
41. Ibid.
42. L.c. p. 178.
43. *Artist. Soc. Proc.* 1906, p. 265.
44. Cp. Essay iv. §3.
45. Cp. *Humanism*, p. 48.
46. Cp. *The Nature of Truth*, pp. 172, 177.
47. Compare the last Essay.
48. Cp. pp. 315-20.
49. Cp. *Humanism*, p. 126.
50. Essay ii. §14-16.
51. Cp. Essay v.
52. It is characteristic of intellectualist 'logic' not to have noticed the discrepancy between its two assertions (1) that 'truth' is wholly a matter of the intrinsic 'self-consistency' of its 'ideal', and independent of all 'consequences'; and (2) that all judgment involves a 'reference to reality' beyond itself.

33

THE GENERAL NATURE OF INFERENCE

§1. The Problem of Inference

With Inference the 'third part' of Formal Logic admittedly begins, although it is clear that in the conception of 'immediate inference' the barrier between Judgment and Inference has worn pretty thin. It is indeed a wholly artificial line which cuts across the natural continuity of thought. For no actual judgment ever leads an isolated life. It is born of parents, and is intended to have offspring. I.e. it is essentially inferential. We judge in order to conclude, or to start, a train of thought.

All this is obvious, both to common-sense and to a logic which has not tried to cut off relations with psychology. But Formal Logic has real difficulty in formulating its conception of Inference. This difficulty is partly due to the general impracticability of its fundamental abstractions, and partly also to its obsession with the importance of the Syllogism, which it cannot help regarding as its own culmination and as an absolutely certain form of 'valid thought'. Both these prejudices prevent it from grasping, and indeed from even examining, the nature of inference as a general problem.

Formal Logic: A Scientific and Social Problem (London: Macmillan, 1912), pp. 165–178.

Now, both etymologically and psychologically we must regard as inference *any* process of thought by which a mind passes from one judgment to another, and the general question about Inference concerns the ways, means, and motives with which *any* train of thought proceeds. The slightest study of this problem at once reveals that the process of inference is exceedingly complex, and that in every concrete case of actual thinking *the whole of a man's personality* enters into it and colours it in every part. It is also obvious that the *value* of the results differs enormously in different inferences, and that however we conceive and judge 'value', some inferences are very much *better* than others.

The Formal logician to some extent recognizes both these facts. (1) He sees that if his science is not to be carried away by floods of psychology, he must *artificially simplify* his problem. He tries, therefore, to win exemption from what seems to him the hopeless, or at all events repugnant, task of observing and evaluating the actual processes of thought, by framing the conception of *valid inference*, which alone is to be a concern of logic. By this means he thinks he can dismiss the bulk of actual thoughts.

(2) He tries to associate this conception with the judgments of value he is naturally prompted to pass on the actual inferences of men. He condemns most of them as 'bad'. Others he regards as 'doubtful', as possibly right, in fact, but as uninteresting because dependent on 'material' knowledge, and few indeed will be the inferences he can regard as 'good', because they are 'valid' and 'necessary'. For *he conceives 'validity' as a matter of Form*. He is haunted by an ideal of 'valid inference' which alone is 'logical inference', in which every step forward is absolutely necessitated by what has gone before. Still he does not despair. He believes himself to have found such Formally 'valid inferences' in (at least) two cases, in the 'immediate inferences' we have already considered, and in the Syllogism.

§2. The Notion of 'Valid Inference'

However fervently logician may believe in 'valid inference', he cannot but recognize that the conception involves certain difficulties. There are three essential qualities which it is desirable, and indeed necessary, that a valid inference should have; but it is not altogether easy to show either how it has them or how it combines them.

(1) A valid inference should be *necessary*. It should exclude every form of arbitrariness or interference with the rational self-development of thought; it should follow inevitably from its grounds.

(2) Nevertheless it should also possess *novelty*. It should riot merely reaffirm what is already known; to do so is not to infer, even for Formal

Logic. A valid inference, therefore, should carry thought on to something new. It is essential to inference that there should be some difference, and advance, of meaning between the truth inferred and its grounds.

For (3) only thus has the act of inference as such a meaning. And a valid inference must be *significant*—significant, moreover, *as a form*. Were it merely to reassert the same meaning, it would have no meaning. Were its meaning to be essentially dependent on the actual circumstances under which it was drawn, it would have no meaning a self-respecting Formal Logic could descend to, and so be worse than meaningless. Nor, again, would it have meaning, if it merely promulgated forms which were said to be absolutely valid, but in which no actual meaning could be conveyed, or which failed to guarantee our actual meanings when we tried to express them by their aid.

This last *desideratum* has not yet been clearly perceived by Formal Logic, but it could hardly be denied. The other two have been familiar enough from the first. They constitute '*the paradox of Inference*', and the difficulty of reconciling them is notorious. For if the judgment inferred is to be inevitable and wholly dependent on its Formal grounds, how can it do anything more than render explicit what is already known? Whence can any real novelty intrude into the Formal scheme, and how can it be conveyed? If we already understand that S and P are not connected, how can it add to our knowledge to 'infer' from 'no S is P' that 'no P is S'? Is not the change merely verbal? Or if we know that 'the ship went down with all on board', and also that 'Smith was on board', what advance in thought is the 'inference' that 'Smith went down'?

We need not discuss this 'paradox' until we have considered these elements in the notion of 'valid inference' in their order, but we should prepare ourselves to recognize it as a still greater 'paradox' if the form of 'valid inference' should turn out to be as such unmeaning.

§3. The 'Necessity' of Inference

What does this mean? Logicians usually consider it too obvious (or too psychological) a question to consider, and the answer is consequently difficult.

(1) It can hardly mean that inferences are accompanied by a *feeling of necessity* in their makers. This is often a fact, and is always liable to become a fact when an inference, made easily and without consciousness of 'necessity', is challenged, and reasserted as dependent upon grounds. But this interpretation will not do in Formal Logic. For such a feeling would plainly be nothing but a psychical fact about the state of mind of those who inferred, and as such would be relegated to psychology.

(2) Can the 'necessity' then mean that, no matter how its maker feels about the inference, there is not in fact any alternative but to draw it? Does it mean *inevitableness* and the absence of a choice? This yields a good 'logical' meaning, and one more consonant with the prepossessions of Formal Logic. But a question may be raised whether it is true, and whether, in fact, such necessity ever occurs in actual thought

It may be objected (*a*) that it is never necessary to infer, simply because it is not necessary to think (Chap. X, §7). Nor can we ever be *compelled* to go on thinking[1] we can stop at any point. No necessity of thought, therefore, can be generated without a *will to infer.*

(*b*) A will to infer, even if it is granted, still leaves us free to infer in every conceivable direction. It does not tie us down to the 'valid inferences' which are Formally 'necessary'. It leaves us a choice between a vast number of inferences, all of which are Formally arbitrary. Having judged 'the day is fine', shall I infer 'I will go out', or 'what a pity I have to work', or 'I hope it will be fine to-morrow', or 'I hate picnics', or 'so it is untrue that there are no fine days in Scotland', or anything else that might be suggested to my mind or another? *Which* of these inferences it is rational for me to draw, and which I shall actually draw, depends on my character and circumstances, my interests and purposes. But I shall get no light upon the subject from Formal Logic. For of all these things it disclaims all knowledge. How, then, can it judge whether my actual inference is 'good' or 'bad', rational or fatuous, 'necessary' or arbitrary and gratuitous?

(*c*) It cannot even tell me which of the Formally necessary inferences, which alone it deigns to notice, I am to be compelled to draw. For I appear to have a choice even among the specifically 'logical' inferences. Why, e.g., should I say, 'Among fine things is this day', rather than 'Therefore the day is not not-fine'? The one inference is compulsory only if my sole mission in life is the conversion of propositions, the other, if it is their permutation. Even in the strictest formal necessity there is still a choice; I need not have converted my judgment, but might have permuted it, or used it in various ways as a syllogistic premiss.

(*d*) Clearly, therefore, the term 'necessity' is either ambiguous, and means 'compulsion' in one part of the Formal argument and 'inferential nature' in the other (in which case the argument reduces to 'all inference is inferential'!), or it is always conditional and dependent on the purpose which animates the thought. But of this essential reference to purpose in all reasoning we do not hear a word in Formal Logic, though its own account of Formal inferences clearly implies purposes of a very special kind.

(*e*) If even Formally there are alternatives to any judgment, it is clear that no Formal explanation of the inference actually drawn can ever be sufficient. The real ground of Inference can never be Formal, even in cases

when from 'All men are mortal' it is inferred that 'Smith[2] is mortal', rather than 'Some mortals are men'. And the existence of this unstated and unknown ground of Inference disposes of the contention that any judgment can be shown to be Formally *necessary*. There can be no such thing as Formal Inference, because there are always alternatives (whether Formal or not) logically conceivable, from among which the actual judgment is *selected*. The principle of this selection is always of a psychological sort, and lies beyond the purview of formal analysis.

(3) The real meaning of what Formal Logic confusedly calls 'necessity of inference' is revealed when we inquire how it could ever get into so untenable a position without discovering its character.

The whole trouble arises out of the simple fact that Formal Logic had not made up its mind as to what it wanted to do. Was it to trace the progress of actual thinking, or to wait until that unquiet business was over and pronounce a sort of obituary notice on its defunct form? If it tried to do the former, it would have to sacrifice its dignified attitude of superiority to sordid fact, and to plunge into the endless eddies of the turbid stream of actual thinking. If it tried to do the latter, it would have to pay the price for the pleasure of serenely contemplating the spectacle of thought's activity. It would have to avow itself a mere spectator, a mere critic of results which it was impotent to produce and which were regulated by alien laws unknown to it. It would be debarred from participating in the *advance* of thought, and even from speaking about it. For its own motion would be essentially *retrograde*; logical reflection would proceed from the conclusion to the premisses, and inquire whether the latter *were* a sufficient warrant for the former. No wonder that the choice proved difficult and the temptation to occupy both positions, and to flee from one to the other whenever either was attacked, proved irresistible.

Still, on the whole the attitude of *ex post facto* contemplation turned out to be the safer, and what the 'necessity of inference' can mean from this standpoint must now be considered. Let us therefore contemplate the 'necessity' of inference as it appears *after* the inference has been drawn, and if no question is asked as to where it was and whether it existed *before*, and while there was still a question of *what* inference should be drawn. Now, *after* the event the inference, if it was of the type called 'logical', may, of course, appear as 'necessary'; it may be seen to have grounds, and to depend on them; if it were not *in this sense* 'necessary', it would be irrational and indefensible. But just the same situation would have appeared if any of its rivals had in fact been preferred. Grounds could have been assigned to all of them (sufficient or insufficient, good or bad), but they would never have compelled any one to judge thus. Thus the 'necessity' of such Formally logical inference is a purely formal feature common to all conceivable

inferences. It no more proves that there was any real necessity to draw any one of them than the formal truth-claim of all judgments proves that any particular judgment is true. Every actual inference was, of course, inspired by motives which led to it, and not to any alternative, and these (whether good or bad) form its real grounds. But of these Formal analysis knows, and can know, nothing. It proves nothing as to the real grounds of any actual inference, simply because it is not relevant thereto. It is merely an *ex post facto* reflection, governed by highly technical and arbitrary assumptions, on an accomplished inference; it is no reason for expecting it antecedently, and no guidance whatsoever in predicting any course of thought or explaining its advance.

The whole Formal doctrine of the necessity of inference, then, is inapplicable *in advance* to any thinking. Indeed it is nothing but a systematic confusion of two points of view, and tries to attribute to progressive thinking the results of looking back on its completed and verbal form. From the point of view of actual thinking this attitude is utterly misleading and irrelevant. The only way of really explaining the course thought is going to take is to go into its antecedents, i.e. the motives, character, and circumstances of the thinker. Such an inquiry may be difficult, but it will not be irrelevant, as the Formal account of thought is doomed to be.

§4. The 'Novelty' in Inference

Here the antinomy may be sharply formulated as being that (*a*) *psychologically* there must be novelty, while (*b*) *logically* there cannot be novelty. The actual position of Formal Logic will be found to flounder about between these two alternatives in helpless inconsistency.

(*a*) No rational mind can be supposed to infer without some reason for thinking at all in the first place, and for drawing the inference drawn rather than any other, in the second place. Whatever, therefore, the inference drawn, even if it is as trivial as the Formal extraction of 'some S is P' from 'all S is P', it must have *seemed* worth making. It must have seemed to convey a sufficient degree of novelty to its maker not to seem an idle and pointless repetition, at least at the time when he inferred. So soon as he had finished, he may have recognized that after all he had inferred 'nothing new', because his conclusion was implicit in the premisses; but *at the time* he cannot have seen this, or he would not have judged. And even if the purpose of the judgment was to instruct others, it must have been a vehicle of novelty. For though it may have been 'nothing new' to its maker, he must have imagined that he was conveying information to his hearers.[3] If he was mistaken about this, he is a bore; but if he were in the habit of knowingly conveying infor-

mation already known to all, he would be locked up as a lunatic. For, as Eliza said to her husband, 'Who wants to be told what they know already?'[4] It is clear, then, that all actual judgments, whether they take the form of 'mediate' or 'immediate' inferences, must possess psychological novelty. For only so can they acquire logical relevance and actual existence.

(*b*) But this psychological novelty, which accompanies all actual inferences, wholly evaporates when we take to contemplating logical 'Forms' in abstraction from actual thinking, Alike whether (1) we confine 'Logic' to bare 'forms', or (2) sublimate it to an 'ideal of knowledge', this novelty become unthinkable.

For (1) the Form must always contain in itself the full ground for the 'inference'. It can therefore only be human stupidity which is surprised, or human ignorance which is enlightened, when the latent inference is successfully exhumed. *Ex post facto* reflection, simply because it cannot arise until the act of thought is over, can never prove anything that is not already known.

(2) The notion of an ideally complete system of knowledge renders inference a superfluity. For it means that all truth must coexist as a whole, and that nothing can be either added or subtracted. Nor, we may add, extracted from it. Any process of selection or construction, therefore, must be a *purely human* operation on this perfect system (or rather on a replica thereof in a human mind), which would be an outrage upon truth's integrity, if it were not impotent. But, fortunately, it can neither dissever what nature has bound together, nor conjoin what nature has set apart; it can make no difference to eternal truth. If, therefore, it is the function of Logic to cherish and contemplate such an ideal, no logical, but only psychological, significance can be assigned to inference; and *a fortiori* to the novelty which attends the discovery of an eternally pre-existent truth by a human mind. Or, if the ideal is projected into the future as an end which thought may some day attain, it will have to be said that *as yet* there is inference and its psychology, but no true logic; but that anon there will be logic, and then neither psychology nor inference.

What, then, shall Formal Logic do? Of the two alternatives it is clear that it cannot choose the first. But neither can it comfortably choose the second. To render all inference and every judgment, with the exception of a single unchanging and tautologous affirmation of total reality, extralogical, is a little extreme, and may be thought to leave too little content even for Formal Logic. The process of purification by evisceration cannot be carried beyond a certain pitch even by the most inhumanly ascetic logic—for fear of committing the happy dispatch.

So Formal Logic compromises. It is inclined to admit that immediate inferences are only verbal rearrangements, and do not add to knowledge. But it clings to the Syllogism, and is reluctant to admit that as Formally con-

ceived it always begs the question. How precisely it conceives syllogistic reasoning to produce new truth will have to be considered in the next chapter. Meanwhile it is enough to note that Formal Logic on this point of novelty has not the courage of its convictions nor the audacity to be consistent.

§5. Is 'Valid Inference' Unmeaning?

Perhaps the most difficult, and yet most fundamental, point in the theory of Inference for Formal Logic to establish is that its notion of valid inference has any meaning at all. More particularly the difficulty is to see how a 'valid inference' can either (1) be produced *in rerum natura*, or (2) become relevant to any actual problem and be trusted to validate any actual thinking.

(1) It has to be remembered that the only clue Formal Logic has to the meaning of any judgment is just the verbal form in which it is expressed. It has on principle refused to consider the history of its making and its psychical antecedents in the mind of its maker. It has thereby debarred itself from tracing the actual concatenation of his judgments and the motives for his inferences. But how can it supply this lack of real causal connexion between the judgments that are to constitute its Formal inference? It must maintain that the mere relation of 'logical connexion' existing between two propositions in the abstract, unapprehended and undesired by any mind, suffices of itself to produce the transition from one to the other. I.e. it must be held that the mere logical fact, that, e.g., 'all S is P' and 'some P is S', are in the relation of 'convertend' and 'converse' is sufficient to produce the 'conversion', to constitute the 'inference' and to make it 'valid'. But how can it do so? And why should it produce *this* inference rather than any other which is also capable of standing in the relation of a 'valid inference' towards the first? And why should logical facts generate *valid* inferences alone? Is it not just as much of a logical fact that there is a relation between 'all S is P' and 'all P is S'? And does there not exist for it the logical name of 'simple conversion'? And what if logic calls the one relation 'valid' and the other 'invalid'? Both seem to belong to the investigation of forms and the subject-matter of logic. Why, then, should not Logic content itself with just registering this difference, so long as there is not conceived to be any one to whom the difference between 'valid' and 'invalid' reasoning appeals, and makes such a difference that he is desirous of achieving the one and of avoiding the other?

The strictly 'logical' position, then, would seem to be that every proposition stands eternally related to an infinity of others in such a way that the 'transitions' (if we continue to use so inappropriate a term) from it to them are in some cases formally valid, but in most cases not. These eternal relations, however, do not in themselves contain any reason why any transi-

tions from any one of them to any of the others should in fact occur. Hence they constitute no ground for *inference*, nor any reason why the transition should proceed towards any *one* of them rather than towards any other. It follows that the notion of a formally valid inference is a misnomer for these relations which fails to express their essential stability. They are not, and cannot be, strictly *inferences*; nor can any inference be really Formal (cf. §3 (2) (e)). The notion of 'valid inference', like that of the 'necessity' of thought, is an unmeaning confusion, due to a failure to distinguish between reflection on the formal aspect of a completed inference and the actual process of drawing the (psychological) inference (cf. §3 (3)).

(2) Even if the traditional schemes of 'valid inference' were intelligible and possessed of any real meaning, it would not follow that they could be trusted to validate or guarantee any actual reasonings. I.e. it would not follow that because they were Formally 'valid' in the abstract they were valid in their applications.

(*a*) The first difficulty which confronts any attempt to apply any of these Formal schemes to actual thinking is that of determining the actual meaning of any judgment. And this difficulty is theoretically insoluble for a consistently Formal logic. For as we have abundantly seen (Chap. XI, §2), all these 'forms' are capable of plurality of senses, and the actual sense of the words used on any occasion can only be determined by referring to the context of the actual live judgment. But such reference is Formally inadmissible. Again, no Formal guarantee is possible that the recognized 'forms' exhaust all the possibilities of meaning. For what a man may manage to mean, and to make intelligible, with a 'form' is a question for psychological observation. Thus the very bricks, out of which the rigid fabric of Formal inference is to be built, are involved in a Protean flux. Not even to so simple a question as 'Is "all S is F" meant in extension or in intension?' is a Formal answer possible.

(*b*) It follows that whatever interpretation of an argument a Formal logician might (arbitrarily) adopt, he is always liable to be controverted. His interpretation can carry no assurance, because it can always be contested as a misinterpretation of the actual meaning, to which there is always an appeal in fact, whether or not it is admitted into 'logic'. When the real nature of Formal Logic's position on this point is properly understood, it is so far from being an assured method of settling disputes as to be irresistibly provocative of objections even in the most pacific minds. Hence the practical man's contempt for a 'logic' which never intervenes in actual disputes save to darken counsel and to sanction quibbling. The particular way in which the form of the Syllogism exhibits this fundamental defect of the Formal conception of Inference will be considered in Chap. XVI, §6. Meanwhile, we may so far anticipate as to declare the belief that by putting a rea-

soning into any particular form it can be made better or absolutely certain, and raised above the possibility of criticism and confutation, to be nothing but an illusion.

§6. Conclusion

We may conclude, then, that the general discussion of the nature of Inference bodes no good to the Formal analysis of the Syllogism. It would be a miracle, if in view of the suspicions generated by its Formal origin it could, nevertheless, establish itself as a useful form of 'valid' inference.

As regards Immediate Inferences, we may now decide that in so far as any one really has occasion to use these forms, they must be real inferences, and as such must involve real novelty. There need not be much of it; the novelty, e.g., in a transition from 'no S is P' to 'no P is S' may be only in the shifting of the emphasis which the new subject involves; but if and when it is judged to be worth making, it suffices to justify the making of the inference, though it does *not* justify its formal claim to be 'necessarily' true. For of course, just as a shifting of the verbal order may alter and destroy the rhythm of a sentence, so a shifting of emphasis may alter *and falsify* the meaning which was originally intended, and a formal change of 'subject' may 'change the subject' materially. Hence in real reasoning even the most trivial of immediate inferences involves a risk, and may need scrutiny, nor does it *ever* 'follow of necessity'. If its assertor denies that he has asserted anything new, he is met by the retort, 'Why, then, did you assert it?'; if he admits it, he admits also that the value of the novelty may be inquired into. Mere verbal transformation for verbal transformation's sake does not occur in actual thinking; whether it occurs in Formal Logic and is the essence of the whole (or game) must be left to the conscience of Formal logicians.

NOTES

1. Except of course, in morbid cases in which the normal mechanism of inhibition is deranged; but it will hardly be contended that such thinking is typically 'logical' or productive of valuable results.

2. I have ventured to substitute this more modern name for the traditional 'Socrates'.

3. The rationale of repetition is, of course, that it is supposed to be more impressive, or to guard against forgetfulness.

4. B. Pain, *Elisa's Husband*, p. 24.

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THE MEANING OF 'MEANING'

It has fallen to me to carry on the discussion so brilliantly started by Mr. Russell last year. As he very truly remarked,[1] "logicians have done very little towards explaining the relation called 'meaning'," though this seems a poor reason for relegating it to psychology, where there is little likelihood of getting its paramount importance for logic noticed, even if its own traditional prejudices allowed an adequate description to be given of the psychic character of meaning.

The reason, however, for this neglect of meaning will probably become obvious if we cast a glance over what has hitherto been the chief inspiration of 'logic', *viz.*, the structure of language, and consider how the chief instruments of philosophic thought have endeavoured to express the notion of meaning. Greek, we then find, is so defective that it can hardly be said to have a vocabulary for the notion at all: it has to rely entirely on periphrases, and gets no nearer to saying 'it means nothing' than declaring that 'it *says* nothing'. Latin is a little better; it has coined the notions of '*significance*' and '*sense*' as aids to the expression of the missing word, and passes them on to the languages descended from, or influenced by, itself. But '*significatio*' is clearly a late and learned word for a special *intensity* of

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Mind 29 (1920), pp. 385–399.

meaning, while '*sensus*' is a manifest misnomer. Meaning belongs to a much higher level of mental development than sense-perception. Latin notices also the volitional factor in meaning by employing periphrases with *volo* and *valeo*, and these, too, have had a prosperous career.[2] It is only in the Teutonic languages that a specific, antique, and genuinely native vocabulary is found for the notion of 'meaning'. The root 'mean' appears to be common to all of them. In German, however, it has suffered serious degeneration. 'Meinung' has become 'opinion', though 'meinen' may still, in a context, translate 'mean'.[3] The result is that German is nearly as badly off as the Latin tongues in expressing 'meaning'. 'Bedeutung' is 'significance' or 'interpretation' rather than meaning; 'unmeaning' is 'sinnlos', 'what does that mean?' is 'was soll das *heissen?*' or '*besagen*', i.e., properly 'what is it *to be called?* or to '*declare*'. It would seem then that 'meaning' usually baffles language: English alone has a full and specific vocabulary for it, as for the similarly important notion of 'relevance'.[4] Is it not manifestly fitting, therefore, that its significance should be discussed in English?

1.

What sort of an 'entity', then, is this elusive fact of 'Meaning'? We seem at first to have a choice between conceiving it (1) as an intrinsic property inherent in objects, (2) as a relation, (3) as a contribution to reality made by the subject, and each of these ways of treating it may find support in language.

(1) Language certainly assumes that objects possess, or may possess, meaning per se. *Words* especially are always supposed to 'have' meaning of their own might, and stubbornly refuse to have their meaning ignored or altered arbitrarily. All dictionaries are dedicated to the service of this belief. Similarly mental imagery is generally supposed to mean. That physical objects should have intrinsic meaning is more metaphysical and disputable, because it implies an objective teleology. Still it has been extensively assumed. For it shocks the philosophic mind to contemplate objects which are meaningless. Nevertheless Mr. Russell assures us[5] that "sensations do not mean," though images often do. Mr. Russell is not as 'tender-minded' as an academic philosopher should be. He even ventures upon a sagaciously pragmatic suggestion which threatens to upset the whole belief in the intrinsic meaning of objects. Even of words he is willing to affirm that "the meaning is only to be discovered by observing its use; the use *comes first*, and the meaning is distilled out of it."[6] If that is true of meanings so plain and so completely catalogued as those of words, may not all meanings be secondary? May not all objects be meaningless per se, until

they are used to *convey* meaning, and meanings attach themselves to them as barnacles to a ship's bottom?

(2) If meaning is thus an acquired character of objects, it will have to be considered seriously whether it is not a relation, and if so, of what kind. We may note that Mr. Russell does not hesitate to assume that it *is* a relation.[7] But we naturally ask 'A relation between what?' This question Mr. Russell does not find it quite easy to answer. He tries (p. 24) to conceive meaning as a relation between an object and an image, but has to admit that "meaning is to some extent subject to the will." Now this admission is significant: for 'will' is, of course, the very devil in the eyes of any intellectualist philosophy. It keeps breaking in and breaking up the fine-spun fictions of analytical acumen. The intellectualist tradition simply *will* not recognise its existence, but cannot exorcise it, because it has no other way of disposing of the whole side of reality from which its *method* has made abstraction. 'Will' is simply the collective name for the chaotic forces that are left out of account, and so menace the stability of cosmic structures, and the policy of clinging to them.

Historically the matter may be put briefly thus. The traditional method of philosophy, in psychology as well as in logic, goes back to Plato. Now Plato reveals himself in his writings as a powerful and vivid *visualizer*, who naturally thought, therefore, that reality existed to be *contemplated*. Subsequent philosophy readily accepted a dogma that accorded well with the natural shrinking from introspection; it set itself to contemplate, and to look upon everything as an object of contemplation—*from without*. Whatever could not be so regarded, was undervalued, or denied altogether. This is why acts, agents, activities, assumptions, and attitudes are necessarily absent from the panorama of the philosophic spectator of all existence. They are not *objects of contemplation*, and cannot be seen by one whose ambition is to be merely a *spectator*. To exist for such a one, everything has to be transmuted into an *observable* object. But does nothing else exist? Surely no contention can be more gratuitous and grotesque. Surely when the observer argues thus, he has forgotten *himself*, and overlooked the all-pervasive realities which condition all objects and form, as it were, the atmosphere which renders them visible and the light which illumines them.

Nor is there any real reason why they should be ignored. Our method of interpretation can just as well, and as legitimately, proceed *from within* outwards. 'Introspection' is possible, though the word is sadly tainted with the delusion that, to be known, the interior of the soul must be 'regarded' as 'consisting' of 'objects' to be viewed externally. Whereas *as experienced from within* 'objects' are by no means the substantial core of reality, but rather secondary, derivative and instrumental; they are the burden of a

swirling tide of life, the products of an arduous activity of selective recognition, the values, means and ends achieved by purposive striving. True, no psychologists, not even those who have struggled most sturdily against the contemplative tradition and insisted on the activity and continuity of mental life,[8] have quite emancipated themselves from the method of turning the eye of the soul outwards; but it has failed so long and so egregiously that it ought to be discarded.

Mr. Russell has provided the last exemplification of this failure. He has loyally tried to account for the facts in the traditional way, and has failed as decisively as Hume and Mill. In order to comply with the imperious postulate that nothing shall be treated as real that cannot be regarded as an observable object, he has even consented to change his own doctrine. "I have to confess," he says (p. 25), "that the theory which analyses a presentation into act and object no longer satisfies me. The act or subject is schematically convenient, but not empirically *discoverable*.[9] . . . I am at a loss to discover any actual *phenomenon*[10] which could be called an 'act' and could be *regarded*[11] as a *constituent*[12] of a presentation." And he encounters the *mauvais pas* of the method (which has hitherto led to the confession of failure) that if the mind is conceived as a series of feelings we must accept "the paradox that something which *ex hypothesi* is but a series of feelings can be aware of itself as a series,"[13] with the heroic declaration that "the belief in a succession may quite well be itself a succession" (p. 42). If nevertheless he is driven to admit a volitional factor in meaning, and to add to the 'contents' of propositions "propositional attitudes" which "do not form part of the proposition, i.e., of the content" (p. 30), we may be sure that he is yielding to the sheer pressure of the facts: the more so when we notice that his examples of "propositional attitudes," memory, expectation and desire, are precisely the terms by which his predecessors sought to atone for their destruction of all the principles that could be conceived to weld together the serial succession of 'contents' into the biography of a continuous spirit.[14] But memory, expectation and desire are facts to which the method common to Hume, Mill and Russell has no right to appeal: they are activities which unite and fuse into significant wholes the fictitious series of 'sensations', 'images' and other 'objects', inconsistently and inexplicably 'connected' by static 'relations'. Their constant recurrence, therefore, in this psychological 'analysis' is as much a confession of failure as is the recognition of 'propositional attitudes' or of contributions to 'meaning' rooted in the 'will'.

(3) We are driven then to consider a third alternative. What if Meaning be neither an inherent property of objects nor a static 'relation' between objects at all, not even between the object and a subject, but essentially an *activity* or *attitude* taken up towards objects by a subject and energetically projected into them like an *?* particle, until they, too, grow active and begin

to radiate with 'meaning'? Here, if anywhere, would seem to lie the clue to the mystery of 'meaning'.

To inquire thus means a fundamental change in the method of psychological analysis. It means the substitution of the standpoint of the *agent* for that of the *spectator*. It means voluntarism, instead of intellectualism. But abstractly it is as possible and as valid a method as the other, and we have good reason to anticipate that it will prove more potent and more applicable to the facts.

2.

Accordingly such proves to be the case. When we suspend our intellectualistic bias, the facts of meaning at once yield overwhelming evidence in favour of the voluntarist interpretation. If 'meaning' is originally a demand *we* make upon our experience, we can, in the first place, account excellently for the all-pervasiveness of Meaning. For we shall then insist that whatever our attention lights upon *shall have* a meaning, and shall forever be inquiring *what* its meaning is.

Hence (1) the assumption of meaning is practically universal. An *unmeaning* flow of experiences is surely the rarest and most unheard-of of events in a normal mind. If we can be said to experience anything that we do *not* take to have a meaning, it is to be found only in the phantasmagoria of some dreams: and even towards dreams the psychoanalysts have shown that science cannot now maintain an ascetic attitude. The common man has never been willing to believe that anything that happened to him could be void of meaning. He is frankly a Nebuchadnezzar, who wants to have even his forgotten dreams interpreted: unfortunately the psychologists have tended to pass the problem of Meaning on to the logicians, and these do not show themselves to be Daniels when they come to Judgment and endeavour to expound the meaning of that (or any other) logical structure.

(2) Meaning, then, is not only universally present, but universally decisive, not only real, but really important. It is not an insignificant accessory to a substantive process of objective change, It is vital and central and all-sustaining. It is the source of the energy which animates and directs the whole process, selects the objects of attention, determines their function and value. All this becomes evident the moment our psychology consents to leave the attitude of the spectator for that of the agent, or to reflect that even the former presupposed an *act* which assumed it. It then appears that there is no reason whatever to be apologetic about meaning, to minimise its importance, to exaggerate the difficulty of discerning it, to drive it into the background, to relegate it to the psychic 'fringe', to try to curry favour

with the advocates of a radically different method of psychological description by disparaging it as 'vague', 'obscure' or 'evanescent'. The meaning he intends is usually what an agent is most clearly conscious of, and what persists most stubbornly, through the various forms of expression he may successively attempt. It is true that meaning is essentially progressive; it promptly ebbs from the various instruments it has utilised for its expressions when they have served their purpose; but it is not true that meaning itself is transitory. It passes lightly on, from one object to another, but it remains a permanent reality of which the subject, *conceived as active*, can never grow oblivious. In Hume's language, therefore, Meaning forms the true 'theatre' of mental operations, the stage on which the various sorts of 'objects' make their brief appearances and play their little parts.

(3) The view of Meaning I have advocated may be summed up in the phrase that *Meaning is essentially personal*; and so it must cause endless trouble to a logic or a psychology built on the assumption that it is *de rigueur* to abstract from personality. What anything means depends on *who* means it, when, where, why, on what occasion, in what context, with what purpose, with what success. A real meaning is as surely rooted in a definite spot in an individual soul as any flower in its bed. It is as particular as any fact can be, and cannot be transplanted to another situation without the risk of a fatal loss or change of meaning. Hence it is incumbent on every one who concerns himself with meaning to beware of stopping short at the conventional meaning of the words and to press on to the meaning of the man who uses them.

(4) This, moreover, he can always do. For a question of Meaning is always a question of fact, as is the question of its communication or understanding. Thus the meaning of any doctrine can always be ascertained (in principle), if we can communicate with its maker and understand what *he* meant. For this is the historic fact which started the development of his doctrine. It is the duty of philosophers then to as certain this primary fact, the personal meaning, *as it was meant*; after that they may proceed to assimilate and 'understand' it. For it is sometimes possible to communicate meaning, though it must be confessed that philosophers are not very expert in exploiting this possibility.

It should be noted further that to declare that meaning is personal is to imply that it is relative to the *whole* personality, and is not a purely intellectual affair. It is deplorable, but true, that intellectual considerations count for very little in the total reactions of the great majority—even of those who believe themselves to be following the light of reason; nor is any of the artificial simplifications to which the sciences initially have recourse more productive of confusion and contention than the facile assumption that when two persons say the same things they must also *mean* the same things.

They usually *don't*, as appears when they make a real effort to understand each other. Hence it is the rule rather than the exception that the same 'proposition' should have very different meanings in the context of two minds with different temperaments, histories and prejudices, and vast masses of perfectly futile controversy would be cleared away if more attention were paid to the idiosyncrasies of the parties concerned and to the natural difficulties in the way of an effective communication of meaning.

3.

From this account of what Meaning is, it follows that it is *not* quite a number of things it has usually been supposed to be. Thus, if the whole course of experience is full of meaning a priori, that is simply because *we assume* that it means, it follows that the meaning of the objects occurring in it cannot be inherent, but must be derivative. For being bathed in a flood of personal meaning, they gradually get stained with a stable colouring, which is determined by the uses to which they have been put and the idiosyncrasy of the user. From this fate there is no escape either for words, mental images or objects; but it will be convenient to consider these cases separately. In each case it will be found that though they tend to acquire stable meaning in consequence of habitual use, it is not possible to fix this meaning absolutely and irrespective of their use. There always remains a margin of elasticity about it which shows that it is false in principle to treat the meaning in abstraction from the use, and the use in abstraction from the *particular occasion* of the use.

(1) That *words* have stable meanings demanding scientific recognition is sufficiently attested by the existence of *dictionaries*, which are catalogues of the meanings on record. At the same time the fact that dictionaries also grow antiquated proves that the meanings of words continue to grow in spite of them. Actually no word can have its meaning so fixed, whether by a dictionary or by a definition, that it cannot work loose. So though the discoverers of new truths and the makers of new values often have reason to complain of the stubborn conservatism of words, the corruptors of language, from the ignoramus to the humourist, triumph easily over the fixity of their meanings. An analogy, a metaphor, a sarcasm, a joke, or even a blunder, will easily do the trick.[15] Thus whether we use words as counters or as coins, we are always confronted with problems of change and of exchange.

(2) Mental images undoubtedly occur, and carry meaning. But, as Mr. Russell is careful to note, they are usually so vague that they can easily accommodate themselves to almost any meaning. A mental image, though it is in itself a particular psychic fact, can stand for, and mean, either a par-

ticular object, or a 'universal', or any number of objects other than that of which it is 'the' meaning. When Prof. Santayana lately wrote about 'German philosophy', he no doubt had his colleague Münsterberg in mind; but his image might just as easily have called up not 'German philosophy' universally, but another of the tribe; or he might have summoned a more inhuman image to typify his topic. The mental image of a dignified old man may mean a friend or a god, and among gods may stand for Jahveh or Jupiter, for Ormuzd or Odin, *au choix*. Mental images then are very obliging; you can mean with them pretty nearly what you like. Which no doubt is one reason why we are so ready to employ them.

There is one thing, however, which it is impossible, or at least improper, to do with them. We cannot make them pivotal from our theory of Meaning. Yet this is the very thing which has usually been attempted. It has been supposed that mental images could possess inherent meanings, and that by associating and compounding these, more or less mechanically, the meanings of judgments could be explained. Or, as Mr. Russell puts it, that "the 'meaning' of images is the simplest kind of meaning because images resemble what they mean, whereas words, as a rule, do not," that "thus the problem of the meaning of words is reduced to the problem of the meaning of images" (p. 22), and that "sensations and images, suitably related," are "a sufficient stuff out of which to compose beliefs" (p. 28).

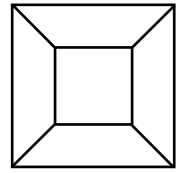
Now this is an assumption I am anxious to challenge. There seems to be no justification for it whatever, and much that tells against it. It is merely a deduction from the theory that objects alone, and no acts, may be recognised by psychology, and all the facts to which it appeals decide against it.

It presupposes (1) that all have mental images, because they are essential to meaning and no one can mean without them; yet it is admitted that empirically imagery is indiscoverable in many excellent reasoners, without damage or detriment to their meaning. (2) It incites to the inference that the more vivid the imagery, the clearer the meaning; but no such correlation can be observed. Meaning and imagery do not vary concomitantly, but rather inversely. (3) It would justify the deduction that the nature of the meaning must be profoundly affected by the nature of the imagery which conveys it; but no such influence can be traced. On the contrary with the same meaning different images may be conjoined, while different meanings may be conveyed by the same image. Actually any kind of meaning is found to be associated with any kind of imagery and no type of imagery appears to have, as such, any advantage over any other. Beyond the fact that meaning and imagery are both frequent occurrences in minds, no logical connexion seems traceable between them.

Does not the evidence, then, point irresistibly to the interpretation that the association of Meaning and imagery is essentially fortuitous, and due,

probably, to the irradiation of the dynamic meaning-activity over the mental contents and idiosyncrasies on which it happens to impinge? If so, one would expect the value of the meaning to depend essentially on the intrinsic energy of the meaning-activity and its success in attaining its objects, and to vary independently of the imagery, which, whether present or not, would be irrelevant, and would add nothing indispensable to the meaning. The belief that the imagery is essential is merely a consequence of this false psychological method that refuses to recognise activities which are not 'objects'.

(3) Meaning sits more lightly on objects and stains them less deeply and permanently than images and words. This is established by the fact that it is not uncommon to inquire what an object means, and to prosecute elaborate researches into its unknown meaning. This implies, doubtless, that it 'has" a meaning; but this assumption is only methodological, and it proves also that its meaning is not on the surface, and has to be sought out. At the opposite end of the scale we find objects whose meaning is so plainly imposed on them by us that we can vary it at pleasure, and make the object mean one thing or another, as we will. Thus in this simple diagram



the central square can be seen as flat, as receding or as projecting, as we will. Philosophy is indebted to the psychologists for the discovery of many such cases, though their importance for knowledge has hardly been appreciated adequately. Between these extremes, of meaning imposed at will and of meaning that is still a matter of faith, there are masses of objects which have more or less inherent and stable meanings. But it is hardly scientific to contemplate these meanings as if they were entirely intrinsic, and had not been attached to the objects by our past dealings with them.

(4) Meaning is not dependent on *expression*. No doubt it normally finds expression by some means or other, or, if it does not, becomes suspect, like the 'pure' science that has *no* applications and so becomes indistinguishable from an arbitrary game, or the well-meaning man who never *does* the good he *means*. The ineffable and inexpressible are rightly suspected of being eulogistic descriptions of the null and void. Still, meaning is the primary fact and expression is secondary. Hence it is possible to have the meaning-experience, to assume the meaning-attitude, *without* using words or any other sort of sign or utterance.

This comes out most clearly perhaps in cases of *obstructed* expression. We are never more purely or intensely conscious of meaning than when we find ourselves totally unable to express our meaning. Who has not felt the agony of trying vainly to express his meaning in a foreign tongue, or to utter an elusive word that hovers on his tongue-tip, but obstinately refuses to pass his *ἕρκος ὀδόντων*? Not a few also have experienced various stages of aphasia, which stretch from trivial 'slips of the tongue' that fail to express what we meant to total inhibition of all utterance. Or again the primacy of the meaning-experience is attested by the fact that a mind may be full of meaning and yet empty of any object meant. As James says,[16] "What kind of a mental fact is a man's intention of saying a thing before he has said it? It is an entirely definite intention, distinct from all other intentions, an absolutely distinct state of consciousness, therefore; and yet how much of it consists of definite sensorial images? . . . It has a nature of its own of the most positive sort and yet . . . the intention *to-say-so-and-so* is the only name it can receive." Consider again James's description of the 'intensely active gap' that fills consciousness when "we try to recall a forgotten name."[17] It is "no mere gap. . . . A sort of wraith of the name is in it, beckoning us in a given direction, making us at moments tingle with the sense of our closeness, and then letting us sink back without the longed-for term. If wrong names are proposed to us, this singularly definite gap acts immediately so as to negate them. They do not fit into its mould. And the gap of one word does not feel like the gap of another, all empty of content as both might seem."

The apparent paradox that meaning should be most intense when it is most obstructed is not unparalleled. Just as the strength of a current is revealed when it eddies over the rocks that obstruct its course, so the reality of our activities is manifested to us by the resistance they encounter. Thus what philosophers are wont to call 'thought' is essentially a phenomenon of obstructed perception, 'will' is an incident of obstructed action, and 'research ' of obstructed cognition. It is natural enough, therefore, that cases of obstructed expression should yield the purest and intensest consciousness of meaning.

How independent of expression meaning essentially is, we may realise also when we observe the flexibility of the instruments of expression when they are plunged in the stream of meaning. Words in particular are by no means as resistant as verbalists imagine. They do not maintain their meaning against the disintegrating influences of usage. What creed or formula means now what it meant originally to its maker? That irony or jest, or even ignorance and blundering, can transmute the meaning of a word is theoretically admitted; but how few realise that the least change of emphasis, intonation or context may change its normal meaning utterly. The verbal form of a sentence is hardly a better guide to its meaning in use

than the etymology[18] of the words. A look, a nod, a wink, a start may reverse their ostensible meaning and convey the actual meaning better than a volume of words. As Prof. Stout has remarked the meaning of 'I am going home' is utterly different according as it is said by a man in the street or on his death-bed, while the 'Greeks' who are feared are probably different every time *Timeo Danaos* is quoted. Why, then, should logicians be surprised to find that the commonest meaning of 'it is a fine day' is 'let us talk', and of 'not at home' is 'won't see you', or that 'it is too sacred' mostly means 'I will not trouble to inquire', and 'I disbelieve' = 'I have not read'? The control of verbal by personal meaning is surely so plain that we may leave this topic with the expression of an earnest hope that the problem of meaning will not long continue to remain too 'sacred' to be pried into by the logicians.

There is, however, one more question I should like to bring to the notice of Mr. Russell. It is the intimate connexion between *meaning* and *value*. To attribute meaning and to attribute value seem to be closely akin and almost the same thing. Both are personal attitudes and activities, which in practice seem inseparable, though, theoretically, meaning may perhaps be said to be prior to value and a condition thereof. Both are all-pervasive, i.e., both form atmospheres through which all 'objects' are observed. Both are 'subjective' in origin, i.e., are attitudes expressive of total personality. Both are individual, i.e., the meanings and values a man recognizes are primarily those which appeal to him, and may be peculiar to him. Thus there is always for every one a problem of *communication*; because he never knows initially whether the meanings and values he attributes to objects in the common world are shared, understood or appreciated by others. But whenever communication is achieved and agreement reached, both meanings and values become 'objective', and may even become cogent and coercive. They then not only grow common and win general recognition, but are projected into objects and regarded as inhering in them. Objects are thereupon said to 'possess' or 'have' value or meaning per se, and whether anyone knows or recognizes it or not.

All of which it would of course be possible to illustrate at length; but I will content myself with a single, and to my mind also singular, corollary. If value is taken to be a 'tertiary predicate', a human addition to reality, which the austere impersonality of science endeavours to erase from the picture of the universe, and if, nevertheless, meaning and value are indissolubly bound up together, will it not follow that in cancelling value we inevitably cancel also meaning? And after this how can we flatter science that it means anything or can discover meaning anywhere? Thus a meaningless logic helplessly contemplating a meaningless reality would seem to be the legitimate outcome of a consistent attempt to abstract from the per-

sonality of the knower in our account of knowledge and reality. And to me at least this situation tends strongly to suggest a doubt whether the meaning of such a philosophy can be right.

I trust I have succeeded in attacking Mr. Russell's stimulating paper on a sufficiently wide front to provide abundant sport for the spectators of our philosophical *battues*, and adequate temptations for the intervention of those who are not content to be merely spectators.

NOTES

1. *On Propositions: What they are and how they Mean*, p. 7.
2. The French, 'qu'est ce que ca *veut dire*?' is typical.
3. E.g., 'Was meint er damit?'
4. Cf. *Mind*, No. 82.
5. L.c., p. 27.
6. *Mind*, No. 82, p. 19. Italics mine.
7. Ibid., pp. 7, 19.
8. Thus even James tries to reduce the self to strain-sensations (i.e., 'objects'), relegates meaning to the 'psychic fringe', and in the very act of recognising it as "an entirely peculiar element of thought" and an "absolutely positive sort of feeling" represents it as "evanescent and transitive" (*Princ. of Psych.*, I., 472), and so gives the lie to the plain fact that meaning is far more persistent in experience than the objects meant. Similarly McDougall, though he calls meaning "the essential part of consciousness," accuses it of 'eluding introspection' and represents it as supervening upon "sensory content," i.e., objects which meant nothing till it came (*Body and Mind*, p. 303). Surely this inverts the real relation: inert 'objects' are selected and swept up by a current of meaning which is exploring reality for means to its ends.
9. Italics mine.
10. Italics mine.
11. Italics mine.
12. Italics mine.
13. John Stuart Mill, *Examination of Hamilton*, p. 248.
14. Cf. Hume's *Treatise* (ed. Selby-Bigge), pp. 260 f., 636; Mill's *Hamilton*, pp. 247, 260, 262.
15. Thus logicians might be invited to take note that 'I don't think' has become an emphatic form of affirmation, and that in American to 'hypothecate' means 'to frame hypotheses', and no longer to 'pawn', and so fills a lacuna in English.
16. *Psychology*, I., p. 253.
17. Ibid., p. 251.
18. Which itself is not a 'study of truth', even though ἔτνμος means 'true'.

35

THE LOGIC OF BELIEF

Our survey of the psychological varieties and shades of belief has been too rapid to do them justice. The topics of each of our chapters might well be expanded into a book. Nevertheless, our sketches may have sufficed to forewarn our readers not to be unduly impressed by the claims of ordinary beliefs to be based on logic. For we have seen that by far the larger number of our beliefs have by no means the character ascribed to logical beliefs, and are quite adequately accounted for by psychological causes. For the most part, beliefs do not rest on reasons, and still less on the reasons given for them: while even when they are most rational and most soundly reasoned, they remain debatable.

Nor, again, are our rational beliefs of a nature rationalism can approve. They are not the pure conclusions of a passionless reason, but the desired ends of a purposive thought. They are not eternal and stable, but temporary and variable. They are not certain and absolutely true, but possess one or other of the infinite degrees of probability. And, so far from being the inevitable consequence of purely logical thinking, they seem to be products of whatever in our complex nature takes satisfaction in entertaining the belief.

It is so plain that even our rational beliefs do not conform to the ideals

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Problems of Belief (London: Hodder and Stoughton, 1924), pp. 94–106.

of rationalism that, if we are wise, we shall not insist on them, nor refuse to recognize the actual nature of our thinking. But even when we have scrapped our rationalistic prejudices, we have done but little to establish the rationality of our beliefs. So marked and so common, indeed, is this non-logical and merely psychological generation of beliefs that a question arises whether reason *ever* engenders belief, and whether any of our beliefs are really rational and capable of logical justification.

At first we are disposed to affirm this, even though we admit, in a general way, that most of the beliefs of all, and all the beliefs of most, are caused psychologically, and can hardly sustain their claims to rationality under critical examination. But we feel very sure about the rationality of some of our beliefs. The beliefs which at any time we hold strongly always seem to us rational, just because *ex hypothesi* we believe that our reasons for holding them are good. This experience, however, would be more convincing if it were not so common; we can observe our neighbors believing, as confidently as ourselves, what seem to us manifest absurdities; we can recall (though, as a rule, we do not care to) the vicissitudes of our own beliefs. The stock example in literature of this condition of belief is that of the amourist who is always in love (thought not with the same person), and always convinced that this time his affection is the genuine article, and destined to endure.

Hence, if we are honest with ourselves, we cannot accept the mere *feeling* of rationality as an adequate *proof* of rationality. And yet, if we do not, what other clue have we to logical rationality? The difficulty is one which always crops up whenever we try to come to close quarters with logic, and to discriminate the logical from the psychological. The logical has no separate existence. It is not, as Plato would persuade us, the superior denizen of a supercelestial world. It always inhabits a mind, and has to be caught and identified within it. And in that company it is always liable to be corrupted by its psychological associates. So we may always make the mistake of regarding as logical what turns out to be only some particularly insistent or blatant form of the psychological, or even an idiosyncrasy of our own. The truth is that our decision that some element in our set of beliefs is 'logical' (and *a fortiori* that it is 'universal' and 'valid' and 'eternal'), and not 'merely psychological', is only a value-judgment of our own, and fully as 'subjective' and risky as other value-judgments are reputed to be. The only proper and prudent attitude towards it is not, however, to shrink from making it, but to make it with our eyes and our mind open. That is, we should recognize that it is risky, and be willing to revise it, whenever reasons for so doing may arise.

In principle, therefore, the distinction between 'rational' and 'merely psychological' belief cannot be made absolute. It is a useful distinction only if

we recognize it as relative and fallible and corrigible. For it is always disputable, and when it is disputed we must always be prepared to show that *in this case* it holds. But, even where we can do this, our demonstration can never be taken as final. It always remains possible that what we took to be rational beliefs, and were justified by the then state of our knowledge in so taking, may subsequently turn out to have been generated in ways which cast a doubt, or even a slur, on their rationality. For example, we may have a belief which seems completely rational, self-evident, and intuitively certain; yet it may owe its logical superiority simply and solely to its survival-value, which has preserved only those who contrived to feel about it as we do. We shall have an arduous struggle with this suggestion in Chapter XII; meantime, we must not assume that the belief that some our beliefs are rational is itself rational. It may be right, but it is a debatable belief, and hitherto logicians have not given any good reasons for it. Indeed, they hardly seem to have realized any of the difficulties involved in their conception of rationality, and have been content to take a very superficial view of it.

The superficiality of what passes for 'logic' arises, here as elsewhere, from neglect of psychology, which logicians have thought it possible to short-circuit. They supposed that they could determine the logical meaning of 'propositions' without going into the infinite complexities of the psychological meaning a proposition might actually convey in suitable contexts; so they gaily abstracted from psychological meaning, without observing that they were thereby abstracting from real meaning, and dooming themselves to mere verbalism. Had they been willing to take into account the psychological side of thought and the real meaning of those who did the thinking, it is not credible that they should not have realized the futility of trying to determine the value (and even the 'validity'!) of an argument, without ascertaining its meaning, purpose, and context, from a mere inspection of its verbal form. For such inspection offers no guarantee whatever that the meaning in use has been, or can be, ascertained, and to base logical doctrines upon such verbalism is to build on a quicksand. The result is that any argument which does not obviously defy certain verbal conventions is allowed to pass as 'logical', even though the logician has not the foggiest notion of the motives, aims, circumstances, and causes that brought it into being and determine its actual meaning and effective use.

His treatment of the 'illogical' is no less shallow, and, indeed, the disastrous consequences of ignoring psychological meaning here come out even more clearly. To abstract from psychological meaning forces the logical doctrine of 'contradiction' to ignore the distinction between real and verbal contradiction, or, rather, to take the latter as proof of the former[1] and as convincing evidence of 'illogicality'. A logical discussion of contradiction will, in consequence, nearly always be found to contain in rapid succession

the following assumptions: (1) That contradiction is impossible, (2) that it is a sure criterion of error, (3) that it is real, (4) that it is only 'appearance', because nothing real can contradict itself, (5) that (nevertheless) we contradict ourselves, (6) that we can only contradict others.

If, now, to this sufficiently contradictory and illogical medley of assumptions we apply the distinction between verbal and real contradictions, we soon discover that 'logical' contradiction is essentially verbal, and that the evidence of its occurrence is entirely verbal. That two propositions, say 'A is young' and 'A is not young', have the sort of incompatibility called 'contradiction' is a purely verbal fact. Whether as a fact they are incompatible depends on circumstances—e.g., on the time to which the two statements refer. Consequently, verbal evidence may always be insufficient to prove real contradiction.

On the other hand, the fact on which the whole logical objection to 'contradiction' rests is plainly of a psychological order; it consists of the incompatibility, or, rather, antagonism, between the attitudes of affirmation and denial. It would appear to be a psychical fact that we cannot without mental distress both affirm and deny the same thing at the same time and in the same sense. But logic cannot really make any capital out of this psychical fact. For the moment after we have affirmed we can, without fatal 'contradiction', 'change our mind', and deny what we affirmed, and the slightest distinction between the cases, the least difference in the circumstances, the briefest lapse of time, may be used to justify the change. If we do not pride ourselves on a rigid, verbal, and unteachable consistency, such avowals will cost us nothing; nay, they transmute the evidence of 'self-contradiction' into proof of intellectual progress. It is practically impossible, therefore, to convict any one of self-contradiction against his will: if he chooses to dispute the charge, and to say that, when all the circumstances of the case are taken into account, the 'contradiction' disappears, nothing can be proved against him.

Moreover, even if he had allowed himself to be convicted of self-contradiction, he would not have been convicted of error or deprived of many means of self-defence. At most he might plead guilty of having made statements that contradicted each other verbally. Now this is prima facie an offence only against the verbal conventions about the meaning of terms which are presupposed in the use of words for the conveyance of meaning. It is an offence which may be justified by a variety of reasons, but these reasons may be demanded. For verbally two 'contradictory' statements cancel out, and leave no assertion standing. Consequently, we do not know what their assertor meant. We have, therefore, a right to ask him to explain himself further. But he can do so in various ways. Thus (1) he can explain that the contradiction was merely verbal. It did not convey his real meaning,

either because he expressed himself badly, or because we did not look beyond the words and so failed to understand him. Or (2), while still declaring the contradiction verbal, he might interpret it by a distinction which would 'really' remove it. (3) He might withdraw one or other of the conflicting statements, not necessarily as 'false', but as liable to be misunderstood. (4) He could cancel both for similar reasons, and start again with a fresh statement. Lastly (5), he could then justify his previous 'contradiction' as a stimulating paradox, which had expressed his real meaning more effectively than he could otherwise have done, and led up to a better statement, which without it would not have been understood. And, seeing that 'always pregnant' Irish bulls are notoriously neither ineffective nor unintelligible, this defence would have to be allowed.

Self-contradiction, then, would hardly appear to be the essence of logical contradiction. But even to contradict other is not as easy as it looks. All that we can be sure of achieving by contradicting others is a certain measure of rudeness: if we are right on the facts, it will be a sort of rude justice; if not, just rudeness. And the logical situation we create is merely a difference of opinion. Even this is not certain. For though it is easy enough, no doubt, to contradict what others *say,* that again is a matter of words, and we may not succeed in contradicting what they *mean*, especially when their actual meaning is not identical with the ordinary meaning of the words they use. Here, again, the psychological question of meaning takes precedence over the logical question of contradiction, and we get an assurance of the reality of the contradiction only from a consensus of the parties to it. The real evidence for it is psychological, and the logician's evidence, being merely verbal, may be irrelevant.

On the other hand, if we allow ourselves to go into the psychical facts, instead of trusting to the crude dogmas of a pre-scientific 'logic', we may have no difficulty in apprehending how self-contradiction occurs and what it means. The logical doctrine that a mind cannot contradict itself rests on an assumption which is psychologically false of (probably) all actual minds. It is deduced from the assumption that the mind is a coherent and consistent whole and that all its parts are in continuous and harmonious logical interaction. But as a fact all minds are full of internal friction and conflict, of which the 'self-contradiction' is a symptom; they are divided into more or less separate departments, and are capable of different attitudes, between which there need be little or no logical connexion. Thus the judgment we pass on a course of conduct may differ widely according as the conduct is our own or another's, that of a friend or of a foe. Our action in a rage or in a panic or in love may differ widely from our normal behaviour. We not infrequently fall a prey to conflicting passions; we feel *odi et amo*, or we are 'willing to wound and yet afraid to strike'.

Why, then, should not such conflicts occur also in our intellectual activities? Surely here, too, we may pursue incompatible aims and make incompatible demands. Here, too, we may desire to eat our cake and to have it too. Here, too, we may forget one aim while pursuing another, and when reminded of their conflict may, nevertheless, refuse to give up either, protest against the 'one-sidedness' of choosing between logical contradictories, and profess belief in a 'higher synthesis' not yet discerned.

It is notorious that such have always been the tactics of the religions when taxed with the great 'contradictions' which pervade the religious life. These contradictions are never the products of passionless logical reflection. They are intelligible only as emotional postulates. God may be just, because the world is so unjust; yet He is also merciful, because infinite mercy alone would save the likes of us from the Divine justice. God must be strong, because we are so weak; nay, He must be *omnipotent*, for how else could He be trusted to be strong enough for all our needs? Yet if He can do anything, why does He not annihilate the evils that force us to cry out for a God? Because, unfortunately, He is not good? No; that were blasphemy. It is no less essential that God be *good*, for else His strength would not help *us*, and He could not be trusted at all. If these two natural demands are tactlessly juxtaposed, there arises, of course, a 'contradiction'; but, if we have faith, let us trust God for a solution of the 'problem of evil' which no mortal eye has ever seen. The 'problem' is plainly manufactured by the clash in our desires, and the logical contradiction is psychologically unfelt *simultaneously*, nor are the trains of thought which lead to the incompatible demands entertained together. A logic, therefore, which consents to recognize the volitional inspiration of our thinking has no difficulty in understanding the situation.

But 'contradictions' are not confined to religious beliefs. The ordinary progress of a science may generate them also in our scientific beliefs. In fact, they *must* arise, just because scientific thought *is* progressive. For not merely does it freely sanction the use of *fictions*, which may be just as contradictory as is found convenient, but it follows from the nature of scientific progress that scientific conceptions cannot be immutable, and may easily become 'contradictory'. For they *must* assimilate new truth when and as it is discovered; they may not reject it on the plea that it modifies their original meaning, nor may they pretend to be infallible and incorrigible. Hence they may often be led to 'contradict' their original meaning; and at any given time a percentage of scientific conceptions, being engaged in such transformations, will suffer from incomplete assimilation of the new knowledge; so they will appear (technically and verbally) 'self-contradictory' and paradoxical. But it will in no wise follow that therefore they are *false*. Thus the conception of the 'atom' has not lost, but gained, in

scientific value by sacrificing the 'indivisibility' asserted in its name, and transforming itself into a system of negative 'electrons' revolving round a positive 'nucleus'; if the logician is pedantic enough to object to the verbal contradiction thus arrived at, he must be told that he has not understood the nature of scientific method.

And that, perhaps, should teach him a lesson in pure logic. It should force him to reflect that every real judgment, every judgment that is worth making and is actually made, must be made in order to convey *information*, and so must have in it something *new*. It must always, therefore, modify the meaning of the terms it uses. Until it was made, it was not known about the particular '*S is P*' that the subject about which it is made accepted the predicate asserted of it; but henceforth S has the meaning '*S-of-which-P-is-predictable*', and P the meaning '*P-predicable-of-S*'. But *ex hypothesi* these are *new* meanings, more or less in conflict with the old. True, the logician never uses real judgments to illustrate his doctrines, but only verbal forms ('propositions'), which may conceivably be used for judging; even so, he has not really made out any case for his dogma that verbal contradiction can be used as an infallible criterion of error. Still less can he show that real contradiction is essentially logical, and not a pale reflexion of a psychological conflict that devastates the soul. One must not, therefore, overlook the significance of a belief simply because it happens to array itself in a 'contradictory' garb. It may be all the more instructive and important for this reason.

NOTE

1. This is the trick, e.g., on which Mr. F. H. Bradley has built the whole metaphysics of *Appearance and Reality*.

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RELEVANCE

§1. Relevance a Practical Need.

If logicians had been able to start with a clean slate, instead of puzzling over the palimpsests of 2000 years, they could hardly have failed to recognise the existence and importance of Relevance much sooner and more explicitly than they have done. As it was, they never discovered it, and the central doctrine of the most prevalent logic still consists of a flat denial of Relevance and of all the ideas associated with it. For it represents knowledge as based upon, and aiming at, all-inclusiveness instead of at selection of the relevant.

But, of course, the blindness of logicians did not prevent the practical man from needing the notion of Relevance. It was left to the lawyers to evolve the conception and its vocabulary. They had, of course, a pressing professional need for the notion. For when a judge has to try a case, or an advocate to state it, he has first of all to outline it, i.e. to determine its limits. He cannot follow all its conceivable ramifications into the infinite. He must draw the line between the circumstances which he considers *rele-*

Logic for Use: An Introduction to the Voluntarist Theory of Knowledge (London: G. Bell and Sons, 1929), pp. 75–94.

vant, that is *helpful*, to his purpose and those which are not. He must make up his mind about the facts, the pleadings, and the evidence which have a bearing on the case and may be admitted, and those which are irrelevant and must be excluded. Otherwise he cannot finish his case within a reasonable time, nor arrive at the truth about it: for if everything that is, however remotely, to be connected with the case is to be dragged in, the *good* evidence, which might lead to the discovery of the truth, will be stifled by masses of bad evidence, leading nowhere, or in the wrong direction. He shows the goodness of his judgment, therefore, in making his selection. He excludes the irrelevant and unimportant, and concentrates on the really vital and 'essential' points: the more he can do so, the more expeditiously can the case be decided and better will the decision be. And, of course, good judges and good lawyers were bound to find this out.[1]

Thus Relevance is a shining example, not only of the imperious way in which practical need acts as a stimulus to theoretic progress, but also of the slowness of theorists to learn from experience. For its theory is still rudimentary, though practically the conception is too valuable not to be in constant use under a variety of names, English being the only language equipped with a complete and adequate vocabulary for it. Although it has not yet found its way into the dictionaries of philosophy,[2] even logicians find themselves constrained to use it, in a covert and confused way, though they are still far from recognising it as one of the primary notions in our actual reasoning, and from being willing to discard the traditional theories which conflict with it.

§2. Positive Implications of Relevance: (1) Subjectivity.

The logical implications of Relevance may be grouped under the four heads of (1) *subjectivity*, (2) *selectiveness*, (3) *honesty*, and (4) *disputableness*. All of these are *positive* qualities of the relevant, though they lead to negations of widespread logical superstitions.

(1) The relevant clearly views the relations between the thinker and his object from the subjective side. This does not mean that the relevant is an arbitrary creation of the individual thinker, which pays no regard to any sort of fact. On the contrary it contains an implicit reference to a given *problem*, i.e. to an objective 'given', out of which the relevant part has to be extracted, while an argument which ignores facts to affirm personal preferences and prejudices will usually be charged with appealing to the irrelevant. To say that relevance means subjectivity merely means that it is conceived not as a quality residing in the thing thought of per se but only in its relation to us; *it lies in its value for us and in our attitude towards it*. It

implies a relation to a human purpose by its very etymology. The 'relevant' is that which helps by affording us relief. It confesses this openly, and makes no pretence of turning the usefulness of things for our purposes into an attribute of the things themselves.

Now by avowing this we escape from the naive objectivism of primitive thought, and the confusions to which it leads, which in this case are very easy to detect. For the original terminology, which that of relevance has superseded, was decidedly *objectivist*. It tried to project into things the values which they have for our varying purposes, and got entangled in hopeless puzzles as to how the same quality could be now 'essential' and now not. The truth was that the 'essential' was sometimes an objectivist term referring to a hypothetical 'essence' supposed to be indispensable to the existence of each thing and to render it what it was (Chap II, §2), and sometimes a misnomer for the 'relevant' and akin to other attempts to describe the relevant as inhering in the object. Phrases like *οὐδὲν πρὸς τὸ χρῆμα*, *nihil ad rem*, *unwesentlich*, *sans importance*, *senza concludenza*, *it is immaterial*, *it does not matter*, *it is not to the point*, are all objectivist descriptions of what is simply the *irrelevant*; but they do not mean anything different from *mal à propos* and *not to the purpose*, which are subjectivist phrases. But *relevant* is superior even to the latter, because it brings out not only *relation* to purpose but also *value for a purpose*. Now purposes clearly imply an act of will, and so the relevant clearly announces itself as belonging to a logic of values which acknowledges the purposiveness of our thought, and does not attempt to abstract from it. It is an integral part of a humanist and voluntarist logic; it can have no meaning for an intellectualism which disdains to notice anything less than the impersonal whole, from which nevertheless it in consistently excludes the personal as wholly irrelevant (Chap. I, §§11, 15).

§3. (2) Relevance is Selection of the Relevant Part.

(2) The *relevant* is plainly a *part*, and an *extract*, and *not* the whole of any matter. It is a very important part, for it includes the true and the false, i.e. the whole area of inquiry in which truth is sought and discriminated from error. This area is *never* the whole, and so for intellectualism the relevant is only part of the Truth, which must include all that has been or can be judged true, as well as what is relevant to the particular inquiry. Thus for any human purpose we consider only part of the total truth, of the thinkable logical whole, nay, even of what is before the mind, the *psychological* whole, viz. the part which seems to us likely to further our inquiry and to solve our problem. Nevertheless, at the outset the relevant area is relatively

large. It *contains* the truth we seek; but we do not yet know whereabouts, and it is our business to find out. If we fail to get to this point we fall into 'error'; and all the errors which arise in real inquiry fall within the region of the relevant, and consist in not 'getting to the point' (which is the 'truth' desired) and getting to the 'wrong' point instead. But in a *successful* inquiry we progressively narrow down the sphere of the relevant and contract it to 'the point', as we leave aside one by one the erroneous possibilities which seemed relevant at first. Thus, though at the outset the relevant includes *both* the true and the false, in the end the true alone is relevant. It also follows that, the better the reasoning, the more rapidly will it contract the relevant, and the straighter will it go to the point. As for the irrelevant, it will mean that portion of the total truth which lies outside the sphere of relevance: and it is plain that any influence it exercises will be pernicious; it will only side-track and thwart the inquiry. Hence successful thinking implies the rule: 'Never consider the whole but only the relevant part' (Chap. I, §§11, 17).

How is this part to be extracted? Clearly by discriminating between the true and relevant and the true but irrelevant, *selecting* the former and neglecting the latter. Such selection, of course, means *preference* and *choice* and *rejection* of the irrelevant. Have we the right to make such selections? Assuredly, if we have the right to believe in the value of our thinking; for all our thinking does in fact select. Assuredly, if we have the right to rid ourselves of the rubbish that blocks our path, the right to select the *humanly valuable* part, the right to desist from vain attempts to include everything in a whole which could only be a chaos. Such selection, therefore, is not a sheer bit of human favouritism which logic cannot countenance; it is the condition of all effective thinking—indispensable, characteristic, and 'essential'. At any rate, whoever says 'relevant' means '*partial*', in both senses of the word, and defies condemnation for it. He should not plead guilty to any *intellectual* shortcoming by way of inattention or omission or failure to include all he might have done, but should justify his selection by ascribing it to conscious, willed, purposive, and rational *concentration* upon *the point*.

§4. (3) Relevance is Risky.

(3) Hence the peculiar *honesty* and straightforwardness of the appeal to Relevance, which involves no sailing under false colours. It lays no claim to 'cogency' or 'formal validity' any more than to exhaustiveness. It does not play for safety first, but avows that it takes a *risk*. It does not try to cover up the fact which damns it in the eyes of every formal logic, viz. that a selection of the relevant must always be a risky affair. For it may select too little

or too much; and, if it does either, it may fail. If it selects too little, it may leave out the point and miss the truth it aims at; if it selects too much, it may find it has too much on its hands, and may get lost on the way to the truth.

It is by admitting these possibilities of error and failure that the notion of Relevance startles Formal Logic, and shows its superior honesty. Its functional equivalents in language all equivocate, and try to disavow them by pretending to derive guarantees for the selection out of the nature of the whole. But it is not literally true that the *irrelevant* is 'irrelative', as the seventeenth century tried to maintain, nor that '*nihil pertinet ad rem*' and is 'immaterial', nor that it is '*beziehungslos*' or '*belanglos*'. Irrelevant facts are *just as much facts* as relevant—though they do not lend themselves to our purposes in knowing. Nor have we a right to call them 'unessential'; for we have no right to postulate an objective ground for our selections in an 'essence' which 'makes a thing what it is', and enables it to dispense with its 'accidents'. We neither know whether there are such 'essences', nor, if there are, how much belongs to them. It may well be that nothing has any 'essence' in the objective sense at all; or again, that nothing would remain what it is if it were stripped of its merest 'accidents'. The 'essences' we actually allege are always relative and relevant to a purpose, flexible and variable, not permanent and immutable. The metaphysical 'essence' of a thing, however, being 'objective' and *inherent in the thing*, cannot vary, like a chameleon, according to the purpose with which it is regarded; yet this is just what we require of the 'essences' we wish to talk about in logic. They are nothing but such aspects of things as are selected as important and helpful for our various purposes; and 'relevance' is the honest name for the 'essential' quality they must display.

For 'relevance' does not take in vain the name of the immutable 'essences' (if such things there be), and *avows* its dependence on the purpose and needs of the moment. We are encouraged, therefore, to confess that the least change in the circumstances of the situation, in our interests, in our knowledge of the facts, may render relevant what was irrelevant before, and irrelevant what seemed most relevant. For example, if the headless flayed corpse of a female child, which can be medically shown to have breathed, is found in a field, the notion of a 'crime' will obviously suggest itself as relevant to the situation, and the police will search for the 'criminal' who put it there; but the suspect could at once render irrelevant all these indications of a horrible 'murder' by admitting that he threw away the remains, and exculpate himself by explaining that the supposed 'child' was the carcass of a young chimpanzee he had been given to stuff. The relevant evidence then became the *skin* of the corpse, which, in the case referred to, was produced, and easily seen to be that of an 'ape' and not of

a 'girl'. Yet it can hardly be said that, objectively and *per se*, the skin was 'essential', or more essential to the ape than to the girl.

In general, what is relevant to an inquiry is variable, and varies as the inquiry proceeds. The discovery of any truth is always a process which *moves away from* the *data* it started with, and transforms, corrects, and revalues them. Our 'facts', our 'truths', our selections of the relevant, all develop in the course of the process, and in the end need not exhibit any verbal identity (or even similarity) with the *data* we started from; for their continuity is only *genetic*.

§5. (4) Relevance is Disputable.

(4) By its honest disclaimer of formal validity the notion of Relevance admits that it is always *disputable*. For once we abandon the assumption that aspiration to the totality of truth is an infallible guarantee, and rest our title to truth on a selection of the relevant part, we admit that the *value* of any selection may be questioned. Selections other than those we prefer are thinkable, and others may prefer them. They will differ, therefore, from us in drawing the line between the relevant and the irrelevant, and in accepting what is to be accounted 'truth'. And it is possible that they are right. Initially, at any rate, no one can be sure he is right. No allegation or truth-claim, therefore, can have a *formal* right to be accepted as indisputable. The merits of every claim must be investigated, compared with the alternatives and evaluated, and good sense and good judgment must be brought to their evaluation. Thus Relevance is *never a matter of verbal form*, and of the implication of words, but always a question of the comparative values of conflicting truth-claims. To one who does not know the circumstances of the actual case an irrelevant argument *looks* just as good and valid as a relevant one; and the worthlessness of a general formula is not revealed until it fails to apply to the case.

To say that Relevance is not a matter of form and not a quality inhering in the nature of things per se, is to say that it belongs inalienably to the logic of personality and real knowing (§2). It is no accident, then, that Formal Logic has omitted a notion utterly fatal to its pretensions. Its self-preserving instinct has instinctively felt that if ever the world became alive to the importance of Relevance its reign would be over, and it would sink into a sterile and trifling game with the meanings of words. This destructive or iconoclastic side of the conception of Relevance must next be considered.

§6. Negative Implications of Relevance.

As has already been hinted (§5) these positive characteristics of Relevance have negative implications. They entirely repudiate and exclude three sorts of Formal Logic. By its selectiveness the relevant negates the ideal of the all-inclusive whole, on which the *metaphysical* variety of Formalism bases its case (Chap. I, §§13-16) by its arbitrariness—the ideal of formal validity so tenaciously pursued by *deductive* logic—by its riskiness—the ideal of complete enumeration of fact—the will-o'-the-wisp which fascinates *inductive* logic. In each case a clear antagonism appears.

Thus (1) if we aim at selection of the relevant, we cannot so much as *desire* to include everything: conversely, if we endeavour to be all-inclusive, we can in no wise sanction any preferences or rejections. (2) If we aim at universally cogent demonstration possessed of formal validity and refuse to proceed with any train of thought which is not driven by necessity, we cannot allow any alternatives or freedom of choice; nor can we content ourselves with probabilities and *de facto* success. And if (3) we wish to go *safely* in arguing from 'facts', we must make sure that we have assembled all the facts before we begin to argue. Conversely, if we think it more desirable to attract than to *compel*, we can prefer the *valuable* to the *valid*, and can progress better with growing probabilities than with immovable necessities. And, if we are willing to take risks, we can start at once; we can repudiate 'perfect induction' and begin to reason long before the 'facts' we use as premisses approach exhaustiveness. Even verbally, this procedure may be justified by insisting that 'premisses' are starting-points and not stopping-places, things 'sent on in advance' for an adventurous thought to go upon, and not fixed foundations for a petrified thought to 'rest' upon.

In short we have here a systematic conflict between two incompatible conceptions of Logic, and the fact that both are coherent makes their encounter all the more instructive. It is a conflict ultimately between the spirit of adventure and the craving for security, and as it springs from a divergence of tastes, aims, and valuations there does not seem to be any 'cogent' way of resolving it. One can, however, understand the motives of both sides and trace them to the needs for which they cater. The logic of adventure is fed throughout the ages by the growth of knowledge, and draws its justification from the need of understanding it. But until recently it played a very minor part, and has not left much mark upon the 'logic' of tradition. The latter sprang from the need of laying down rules for dialectical debate, and for deciding who had won; but this practical aim was soon overshadowed by the desire for formal validity and inerrant truth. Hence the whole history of Formal Logic is best interpreted as an obstinate (though futile) search for an absolutely *safe* road to truth.

§7. The Vain Search for Safety.

Safety was first sought in *syllogistic deduction* from true premisses, which was supposed to leave no opening for the intrusion of error. But it was an error to suppose that a perfectly valid form of syllogistic reasoning could not go wrong in its use (Chap. XV, §3).

Also this theory of demonstration presupposed a large supply of unquestionable truths to serve as premisses, and required an account of the 'inductive' process which was to put them at the mind's disposal. It soon became clear that to be 'valid' general propositions of the kind required must either be based on exhaustive enumeration or else be self-evident and self-proving. Then it appeared that the former were impracticable and unattainable, while the latter were uncritical and incapable of differentiating themselves from prejudices and delusions. So, as a last resort, a desperate logic threw itself into the arms of a siren metaphysic, and listened to the specious plea that if only it could get a guarantee from the *whole* of truth it would be inexpugnable and safe, and that thus *alone* could any truth be truly true. About the existence of such a whole of truth no doubt was entertained. For, even though it was not strictly proved, it was taken to be undeniable and a necessity of thought. For to deny it would mean to deny that the Universe was a universe. Thus a veil of metaphysical mystery was flung over the logical *lacunae* in this argument.

For a long time this expedient seemed to suffice. It was a waste of breath to expose the fallacies of this metaphysical logic, the mockery of promising our thought safety and irrefragable validity at the price of absorption in the Absolute when the conditions laid down for the attainment of safety stipulated that no *human* thought could conceivably attain it, the subtle cynicism of labelling a hardly veiled triumph of scepticism a guarantee of absolute truth, the bold impudence of assuming the validity of the 'ontological proof' from the existence of a human idea to that of a reality to correspond, and the naïve verbalism of taking the real as forming a real totality simply because of the verbal custom of calling it a 'whole', or a 'world', or a 'universe', despite the fact that in many ways the real by no means comported itself as a 'whole'. To all such scruples there was one reply: Logic, a partial science, could be relieved of its defects only by merging itself in metaphysics, the science of the Whole.

But it is gradually becoming clear that the self-sacrifice thus demanded of Logic is vain. The metaphysical Absolute is the annihilation of Logic in an abyss of scepticism; but it is neither a guarantee of safety nor a successful exemplar of all-inclusiveness. It cannot be all-inclusive unless it can be conceived as including, not only the totality of truth and reality but also the totality of errors and illusions existing in those whose position in the

Whole renders them subject to ignorance, error, and illusion. For every illusion and every error, however easily omniscience may trace it to the ignorance conditioned by every partial standpoint, just because it is relative to a partial standpoint, must after all count as a real ingredient in the total real. The universe does really contain error and evil and ignorance, even though they are said to be 'only appearances'. They, too, are 'necessary', being the appearances which *must* occur in certain places in the Whole. They, too, therefore must be included in the Absolute, however confident we may feel that they are included only to be transmuted and transcended in the blaze of its glory.

They must be included, moreover, *as they are*, in their unmitigated poignancy. For unless the Absolute could itself feel the agonies of ignorance, uncertainty, error, pain, and defeat, *as we do*, it could not understand these experiences, and would not include them; they would be recalcitrant alike to its power and to its knowledge. It might, privately, assign them to a very low level of reality (or 'appearance'), and regard them as detracting not one whit from the total goodness of its cosmos. But none the less the Absolute is officially bound to do justice to every standpoint possible within it—to that of its deriders as to that of its adorers, to that of the worm with a turn for criticism as to that of the god, to that of the devil as to that of the angel. Unless it does, it fails to be all-inclusive, and so to be absolute—i.e. to be itself. It must, therefore, include, and render compatible, all the most contradictory attributes. And, as everything is such that some one does not know it and cannot do it, the Absolute has somehow to be simultaneously omniscient and omninescient, omnipotent and omni-impotent; so far, therefore, from being that in which no contradictions can exist and from being incapable of contradicting itself, self-contradiction is its normal condition; it is nothing but the *locus* and meeting-place of all contradictions.

But, however capable the Absolute may be of accommodating all its contents, no *theory* of the Absolute could content itself with such a rag-bag. Even though it despairs of understanding *how* the Absolute transcends and harmonises its appearances, it must at least endeavour to appear as an orderly system itself. So it will have to *select* from the contents of the Whole such items as it deems capable and worthy of fitting into its system. The rest it must treat as irrelevant and leave out of account. This explains why theories of the all-inclusive Whole are never themselves all-inclusive, but are forced to omit a great deal. They are in fact quite as selective as the other products of human thought.

But if they are selective, they are also, in principle, as *plural* and *risky* as any other sort of theories. Once selecting is permitted, out of the same mass of *data* an indefinite number of selections may be taken, each with a claim

to be the theory of the Whole. This explains the multitude of metaphysics. But, just because there are so many, none of them can claim to be inevitable, cogent, and free from risk. Consequently, we cannot, by adopting the first one of them we encounter, escape the risk of error and obtain a guarantee of absolute truth and infallibility, even in idea. Formal 'safety' is as far off as ever.

§8. How the Relevant is Selected.

Thus the pursuit of 'safety' has forced Formal Logic to the brink of a metaphysical abyss into which it is invited to jettison itself and its problems. But to do so, though it may dissolve logic, is not to solve its problems. Even if Formal Logic becomes *felo de se*, the actual nature of our thinking remains, our search for relevance remains, and the problem of its selection remains; and these all remain to be described and appreciated. If, moreover, they are properly described, there will be little difficulty in appreciating their function as integral parts of a logic of adventure which does not need an assurance of absolute safety before it will budge an inch; it is anxious to get on, but it looks before it leaps, and justifies its procedures by their conduciveness to the progress of thought.

Now every act of thought comes into being in an individual mind which has been stimulated to perform it by its total equipment and history, because it found itself in a situation that seemed to it to demand 'reflection'; i.e. an arrest of action and an analysis of the situation for the sake of determining what it had '*better*' do. In other words, it is a necessary presupposition of any act of thought that the situation should appear *problematic*, and that should be designed to cope with it: unless it does, habit and impulse would suffice, without thought, to determine the way the situation is met, and would be preferable, as economising both time and trouble. We think, then, only when we are in a difficulty and can think of nothing better to do (Chap. X, §§5-7).

If this be so, and it is a psychological fact even the most inexpert observer can easily verify in himself, it stands to reason that the thinker's 'situation' *never* embraces the totality of reality (if such a thing there be); it is always conditioned by the limitations of his knowledge and his personality. Indeed but for this there could be no thinking: for if the totality of reality were present to the mind, it would either form so overwhelming a problem as to paralyse thought, or, if the mind were that of one of those fortunate metaphysicians who flatter themselves that they know it all, there would seem to be no problem at all, and thus no need for thought. Thus all the problems we think about are problems about points and parts, pre-

sented to a mind which does not take in the whole of reality, and by its very nature cannot but select a part, and aims at nothing more.

It does not follow, however, that the solution of our problems must be partial also, and cannot be complete; and still less that it must be false and infected with error. For the parts of the whole which are omitted, or ignored, may be *irrelevant* to our purpose; if so, they will not enter into the constitution of *our* problem, nor detract from our complete satisfaction with its solution. So the doctrine that partial truths must be partly false is really a denial of the existence of irrelevance: as a logical doctrine it is quite gratuitous, a mere deduction from a false metaphysic, and unwarranted in fact (Chap. I, §15).

It should further be noted that not only do our problems not concern the whole of reality, but that they never concern the whole of what is before the mind. The mind always contains much that is felt and judged to be irrelevant, and is therefore neglected by our thought. About the irrelevance of any of these contents it is of course possible to be in doubt and in error; but about the practice of ignoring them there can be no doubt, and the assumption (never justified) that it must always be an error stultifies all actual thinking. Actually, most minds are apt to *include* too much, and to clog themselves with much that is irrelevant: logical theory, on the other hand, even while professing all-inclusiveness as its ideal, has tended to *exclude* too much. For it has shut its eyes to the part of personal idiosyncrasy in determining the course of thought, and, somewhat recklessly, treated as irrelevant and unworthy of consideration the influence of desire, bias, purpose, context, and the like. It has thereby created an artificial chasm between the theory of thought and actual thinking, and needlessly destroyed the relevance of each to the other.

However, there is no doubt that the 'truths' selected for utterance as bearing on a situation are always *thought* to be relevant when they are propounded. Whether we are right or wrong we always endeavour to state a relevant truth. We try to select such portions of the truth that is within our ken as we judge to be relevant, and neither to assert all we know nor to blurt out the total truth about the whole universe in a single gasp.

This goes far to explain a number of facts to which the attention of logicians should be called. It explains why we do not go about asserting things merely because they are true. The truths worth asserting, and asserted, are not the indisputable truths of the first water, but those struggling into being, which others do not as yet see or recognise. To go about declaiming irrelevant truths, reciting platitudes and selections from the Multiplication Table, therefore, would be a sure way of getting oneself execrated as an intolerable bore, while to offer its unchallenged truths in lieu of something relevant, though disputable, would be positively dangerous.

A man who always remarked that 2 + 2 = 4 when asked for the time would probably get himself locked up as a lunatic; for a truth which is not to the purpose is a slur on one's rationality.[3] It explains also why relevance takes precedence over truth, and truth is no excuse for irrelevance. It is rather an aggravation; for an irrelevant answer to a question, which is true, is more irritating and more troublesome than one which is plainly false. For, just because relevance is not a formal quality, the irrelevance of an answer which is in general 'true', and might be relevant to a different purpose, is always a question of degree and may always be disputed; thus the decision of a question of relevance is commonly harder than that of a question of truth, and Formal Logic naturally shrinks from it.

It explains further why a knowledge of the 'universe of diction' is so necessary to mutual understanding; we must know the range of subjects which are taken as relevant to the inquiry before we can take in the meaning of any discussion. Accordingly, the first thing to be done in every science is to arrive at some delimitation of the 'facts' (real *and* supposed) which may be taken as relevant to its interest. Nor is this initial difficulty easy to overcome. Many sciences struggle with it for centuries At the outset the really relevant *data* are rarely on the surface, while for various reasons much that is irrelevant is impressive and insistent and attractive, or seems akin in nature to what is highly relevant. It is much easier to deride the errors of early science than to show how they could have been avoided. How, e.g., was a primitive astronomer to realise the enormous differences in the pragmatic value of the heavenly bodies he was so tempted to adore? How was he to find out that while the stars were so distant that they seemed 'fixed' and had no appreciable influence on the solar system, and while the gyrations of the 'planets' had no effect upon the destinies of man, and even the portents of irrupting 'comets' were no heralds of 'disaster', it was yet true that the moon controlled the tides (but not the weather!), and the sun the seasons, and ultimately every movement of terrestrial life? The pseudo-science of the astrologers was a direct consequence of their taking too generous a view of what might be included in the relevant, and in general the infant footsteps of every science and every inquiry are clogged with masses of irrelevance.

§9. The Fatal Omission of Relevance by Inductive Logic.

The selection of the relevant, therefore, is not a thing logic can take for granted, if it wishes its procedure to have any likeness or relevance to the processes of actual reasoning and inquiry. It is one of the major achievements of knowing, and prior to the discovery of truth both in time and in

urgency. For it is only when we have settled what our subject of inquiry is to mean, and decided, more or less provisionally at first but with growing accuracy, what is relevant to it, that we can begin to discuss the value of the alternatives, which all lay claim to truth, and ultimately make up our minds which of them is the *best*, and so the *truest*.

The theory of induction in particular has suffered much from the slurring over of the conception of Relevance, even as that of deduction has suffered from the omission of a study of Meaning. For so long as it was tacitly taken for granted that the 'facts' from which induction argued were relevant, and that no inquiry need be undertaken to discover how a reasoner came by them, inductive reasoning could be made to appear a quite contemptibly easy job, which demanded little intelligence and no vigilance or alertness of mind but only mechanical accuracy. All an inductive reasoner had to do was to observe the 'facts' which were objectively 'given' him without effort or activity on his part. Having observed them all, or so many as would suffice mechanically to 'validate' his inference, he had merely to recognise the universal principles or laws into which they spontaneously condensed themselves. There was no need, therefore, according to this account, of any special ingenuity or mental activity, either in observing the 'facts' or in formulating the 'laws'. Indeed the process seemed so mechanical that Bacon could conceive the ambition of teaching the meanest intelligence the art of scientific discovery, and other inductive logicians even imagined machines for making inductions; while all believed that inductive reasoning could attain as much 'validity' as deductive. This claim no doubt was rejected by their deductive opponents, who insisted that inductive reasoning could never be formally valid, and inferred that it must be of inferior value. It never occurred to either party to notice that no forms are universally valid, that valid forms are no guarantee of real value, and that real reasoning does not require valid forms (Chap. XIII, §6)

Nor did either party notice how the notion of Relevance entered into inductive reasoning at every step, and was needed to make sense of their theories.

Thus (1) it is requisite that the 'facts' argued from must be relevant to the subject of inquiry.

(2) They cannot, therefore, be merely 'given', but must be selected from a much larger mass of irrelevant, alleged, and illusory 'facts', as *facts-for-the-purpose-in-hand*. This process will involve acts of choice, preference, and valuation.

(3) It is quite clear that the vaunted 'Canons of Induction' would be utterly paralysed, helpless, and invalid, unless the relevance of the 'facts' they operated on were presupposed. How else could the Methods of Agreement and Difference conceivably comply with their own requirements?

How could they find two cases in which *only one* circumstance was common or *only one* was changed? This is difficult enough if the circumstance is assumed to be relevant; it becomes frankly absurd if the Method of Agreement is allowed to postulate an all but total change, and the Method of Difference an all but total immutability, in the flux of events.[4]

(4) There is a covert appeal to relevance involved in the very notion of two 'cases' of the same 'law' or 'cause'. For the actual course of events never repeats itself exactly; hence the identical 'cases' are always artificial, and have to be extracted by selection. Their actual circumstances always differ, but these differences are taken to make no difference, i.e. to be irrelevant. Only so can they figure as cases a^1, a^2 of the law 'A'. But the bare 'law' is never a fact, while the 'case' is merely a fragment of the 'facts', which always contain much more than what qualifies it to stand as a case of the law. It should always be symbolised not as a, or even as a^1 but as $a^1 + [b^1, c^1 \ldots x]$, and its excess of meaning over the mere 'case' a always affords ground for its interpretation as a 'case' of *other* laws. There is always a logical possibility therefore that other parties to the inquiry may prefer an alternative interpretation, and so turn our case 'a^1' of law '*A*' into case '*b*' of law '*B*'.

(5) Similarly, the 'law', which our case is taken to exemplify, is also a product of our choice. It has always to be fitted on to the actual observations, the crude 'facts'. These, however, may fit as well, or nearly as well, into a number of other formulas, so that as far as the 'facts' go they might be taken as cases b^1, b^2 of law '*B*' as easily as cases a^1, a^2 of law '*A*'. It is the relevance of the *data* to a suggested law that enables us to verify the law; but the possibility of their relevance to several 'laws' should not be ignored. Whenever he encounters this situation the inquirer must choose his law, and it is generally its superior relevance to the aim of the inquiry which determines his preference among the rival laws. Thus it is quite false that inductive reasoning is a mechanical process into which our estimates, our aims, our choices do not enter. On the contrary, it is our interventions that initiate it and determine its course.

(6) It is clear that the actual conditions of inductive reasoning nowhere require, or even admit of, formal validity. A selection of 'facts' cannot claim to be a formally cogent totality: a selected 'law' cannot pretend to be the only one. The truth is that in our inductive reasoning validity is everywhere sacrificed to relevance. And rightly, because relevance is a far more valuable notion, and is incompatible with validity. For decisions about the relevant can never be formal: they must be tentative and experimental, and presuppose 'material' knowledge of the actual circumstances of each case. Its strength (or weakness) is betrayed by no *formal* sign; verbally, an irrelevant argument may exhibit as much formal validity as a relevant.

Nor is dependence on relevance inherent in inductive reasoning alone.

It is found in all reasoning. It was shown in the last chapter (§§13-14) that the meaning and use of universals involved a double use of the notion of relevance. In the first place, universals can be extracted from their particular exemplifications only by treating the latter as 'cases' of the 'same' universal, and by treating the differences between these cases as *irrelevant*. And, secondly, universals can be *applied* to the interpretation of events only by treating as irrelevant all the contents of phenomena over and above the universal we are seeking to apply to them, and by assuming that though they appear to *be* much more than bare universals they *mean* nothing more.

This twofold limitation imposed on the use of the universal has puzzled Platonising logic from the first: it could never under stand why phenomena only exhibited universals obscured and entangled in 'matter', and would not let themselves be reduced to 'pure' universals or complexes of such; it had desperately to infer that, therefore, phenomena could not be true reality, and that everything sensible must be contaminated with unreality. Nor could it explain why to the same phenomenon a number of *alternative* universals could be applied, and how questions could arise as to which was the *right* one. The notion of relevance relieves universals of these embarrassments; if they are selections of relevant aspects, fashioned as instruments for operating on the flux of happenings, and taken out of larger wholes for our various purposes, our selections will naturally vary with the purposes they serve. And if we are entitled to ignore whatever contents of the real are irrelevant to our purpose, it is no longer unintelligible that it should always contain far more than concerns us at any particular time, and should be all the more valuable on this account.

§10. Conclusion.

Relevance, then, is a conception utterly alien to Formalism. The intellectualist logic, therefore, which never looks beyond the forms of propositions and never seeks to penetrate to the meaning of those who use them, and so is nourished on a diet of mere words, finds it quite unpalatable and indigestible. It belongs inalienably to a humanist logic which conceives thoughts as personal acts, demands activity and allows selection, and consequently speaks throughout the language of voluntarism rather than of intellectualism. Such a logic will value Relevance as one of the great pivotal notions on which real reasoning hinges, and will cherish it as one of the best ways it has of expressing the crucial contrast between the voluntarist and the intellectualist treatment of thinking. And it will take special pleasure in showing that no intellectualist account can attain to consistency until it has wholly purged itself of every vestige of Relevance.

NOTES

1. The amazing thing is how long it took them to do so. For, as a matter of historical fact, it is only in the Scotch law of the sixteenth century that the proper vocabulary of Relevance begins to appear. According to *The Oxford English Dictionary* 'relevant' dates from 1560, 'relevancy' and 'relevantly' from 1561, while 'irrelevant' is not quoted till 1786 (Burke) and 'irrelevancy' till 1802 (Bentham). In other countries not only is this terminology missing, but the actual procedure seems to overlook even the practical need for it. Hence the law seems is to us to be extremely lax in admitting masses of irrelevance, and its decisions often seem a travesty of justice.

2. It is not listed even in the 'corrected' edition of Baldwin's *Dictionary* (1920).

3. This truth, which has escaped the profoundest logicians, has been grasped by quite low comedy journalists. Thus *The Bystander* for 18th April 1928 had the following dialogue:—"*First Luny*: 'Well, who is going to win the Derby?' *Second Luny*: 'I can only say that if you drink *crême de menthe* with oysters there is bound to be trouble with the miners'."

4. Cp. *Formal Logic*, chap. xix, §7.

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PERSONALIST LOGIC

My aim in this essay is to draw out the consequences of the break-down of Formal Logic traced in my first paper and to consider whether we shall not fare better with what may be called a *personalist* Logic, because it refuses to make the abstraction from personal meaning and personality generally, which we saw to be characteristic of Formal Logic.

Personalist Logic rests in the last resort upon a number of quite familiar facts, which no one dreams of denying till he has plunged into philosophic controversy. Thinking is a mental process; judging is an act; meanings occur in minds; minds cherish purposes, and enter upon trains of thought. Moreover, all minds are personal, and exist in the plural. What does that mean? It means that there are many minds and that they are not merely vain repetitions of a standard pattern. Each has its individual peculiarities or idiosyncrasies, and is in a way unique. Regarded from without, after the fashion of observant science, personality is the *sum of the differences* which distinguish one mind from another. As lived within, with all the wealth of direct experience of its self-preserving identity and continuity, personality may, of course, mean infinitely more; but this overplus of

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Must Philosophers Disagree? And Other Essays in Popular Philosophy (London and New York: Macmillan, 1934), pp. 43–46.

meaning is not expressible in scientific terms. Not because it is not real, but because it must be felt and lived.

If now our knowing proceeds thus personally, why should not our logic recognize this fact? If its business is to regulate our thinking, why should it not begin by describing it as it is? Why should it ignore our actual procedure and substitute the artificial concatenation of a number of fictitious entities and babble about inherently meaningful terms connected by logical necessity in a valid form? Let us pluck up courage to dispute that verbal meaning is the genuine primary and important meaning at all, and try to develop a logic that starts from personal meaning and regards verbal meaning as derived and secondary. It could not yield a worse logic, and might easily do better.

Actually the facts seem to be simple enough. No one thinks till (he thinks) he has to. That is, till he becomes aware of a question or a problem. Why? Because thinking is troublesome, and takes up time, and delays the course of action. So stopping to think must justify itself by conducing to better action. When we stop to think it must be because we think we can thereby better our reaction to the situation. When we embark on a train of thought it must be because we think it will waft us to the destination of some desired end. It is thus the end in view which directs our thought and measures our success. A willing mind needs no logical necessity to drive it onward. Nor do we aim merely at logical validity: real truth alone contents us. And we are interested in the inherent meanings of' terms ' only to make them vehicles of our own personal meaning. Language is recalcitrant to our meaning only because it has become imbued with the meanings of those who have used our words before us. But it is still personal meaning which engenders verbal, and it is a blunder to infer that a word's meaning is ever sacrosanct and rigid; it remains plastic and pliable to skilful and resourceful usage.

On this vital point Humpty-Dumpty was the pioneer of the true doctrine. "When I use a word," he said, "it means just what I want it to mean, no more and no less." He proclaimed his mastery over verbal meaning, and moulded it to his purpose. He was masterful, but just. When he overworked a word in a new sense which suited him, he always paid it extra; and he did not overlook the problem of *communicating* his meaning. When he used 'impenetrability' in a highly personal sense, he did not disdain to divulge his meaning to Alice. If only the philosophers and scientists who revel in technical terminology would follow his example!

If meaning is personal, so is judgment. Every judgment is an *act*, for which its author takes responsibility. It is also an *experiment*, of which he notes, and takes, the consequences. It is, moreover, an experiment which aims at *new* truth, and modifies the meaning of the terms it uses. For if the

combination *S is P* were not thought to convey information, it would not be judged; and when it has been judged it enriches the (verbal) meaning both of *S* and of *P*. *S* is henceforth an *S*-of-which-*P*-can-be-predicated, and *P* a *P*-which-can-be-predicated-of-*S*.

Personalist Logic, therefore, is not concerned with propositions as such. It treats them as mere verbal formulas and as *instruments* for operating upon particular situations, which have real meaning only in their contexts. But, so taken, they cease to be propositions and become *judgments*.

Judgments alone can be true (or false). Propositions can only be useful (applicable) and relevant. Their so-called 'truth' is only 'potential' and 'proleptic', and depends on their application. If a proposition is *misapplied* (as all can be), it does not yield a 'truth'. Even 'two plus two equals four' fails, if it is used to predict the behaviour of drops of water or of mercury.

As for reasoning, it always deals with probabilities. Even a syllogistic conclusion is only the deduction from a hypothesis which has to be verified by coming true in fact. But such verification does not make it absolutely true or even formally valid. It merely increases its probability and that of its premisses. Thus neither truth nor proof is ever absolute. But for this very reason both can be *progressive* to infinity.

Lastly, it is not ultimately true that scientific method, which is the method of proceeding by hypotheses resting on volitional postulates and verified at every step by confrontation with experience, either must, or does, abstract from personality. True, in formulating 'laws of nature' abstraction is made from the particularity of the events from which these formulas are drawn. They are not *said* to hold at any particular time or place or of any particular thing. But the reason is that we desire to transfer them from one particular context to another. For 'laws of nature' are *our* means of predicting and controlling the course of events, and they have to be extracted from their historical setting in order to become applicable to future cases. These of course are just as particular as the setting from which the laws were taken: so when the time for their application comes their particularity is restored. Thus the truth of our 'law' is tested and confirmed by its success in predicting events at a particular time and in a particular place. Also, it should never be forgotten, for *the purposes and the satisfaction of a particular observer.* So the abstraction from personality which is practised in the sciences is more apparent than real; the sciences are not guilty of the delusion of many philosophies that unapplied, depersonalized, 'universals' are as such of superior dignity and value.

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MULTI-VALUED LOGICS—AND OTHERS

For more than fifty years I have been inquiring diligently of all the logicians and logics I could get hold of what they think logic is about; what, that is, its subject matter is and how it is related to the subjects treated by other sciences with which it comes in contact and has more or less friendly or hostile relations. I regret to say that the Holy Grail itself has not proved a more elusive quest. Not only have these inquiries led to no very intelligible or satisfactory result, but, so far from logicians working their way out to greater clarity about the aims and objects of their industry, the muddle logic is in is growing steadily and rapidly worse. The truth of this statement hardly needs to be expounded at length: it will not be disputed by any one cognizant of the facts about the present state of affairs. But a brief summary of the situation will be such a good introduction to such remedial suggestions as I can offer, that I must undertake the ungrateful task of setting out in plain English the actual condition of the studies that figure under the name of logic.

There are in being at present no less than four distinct inquiries that claim the name "logic." As scientific systems they are incompatible with each other; and neither the logical nor the psychological connexions

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Our Human Truths (New York: Columbia University Press, 1939), pp. 298–318.

between them are at all direct and obvious. So different are they that they can hardly be regarded even as divergent species of the same genus.

1. There is first of all the old Greek logic of dialectical debate, which reached its culmination and a high degree of perfection in the syllogistic of Aristotle and may for purposes of reference be denominated "Barbara." It is not only the oldest but also the simplest and easiest of all the logics, and it is still apparently the most convincing. It is still the only logic which is taught extensively (and perhaps the only one capable of being taught) to the young; and if logicians would be candid about their past, they might all have to confess that at some time or other they have been enormously impressed by Barbara, and more or less in love with her! It takes time and maturity to revolt against her charms, to detect her tricks, and to abandon her devices.

Moreover, there is really something to be said for Barbara, if she is taken in her historical setting. The original purpose of logical study in the Athens of the fifth century B.C. was essentially forensic: in the absence of lawyers (who had not yet been invented) the young men of the upper classes were eager to be trained in the art of public speaking, in order to de fend themselves and their property against the constant attacks of professional informers who arraigned them before hostile democratic juries. So they flocked to the Sophists to learn how to compose orations and followed Socrates round to learn the art of cross-examination. The most urgent demand, therefore, which logical study had to satisfy was that for dialectical victory and "proof"; you wanted to beat the other fellow, to crush him so that all could see that he was beaten, and to compel him to own himself beaten. Naturally, therefore, Barbara became a logic of consistency and compulsion and laid all her emphasis on constraining a reluctant mind to yield to "necessary" truth. Her one object was to convict an adversary of inconsistency and self-contradiction, to drive him into a corner, and to force him to unconditional surrender.

On the whole Barbara did her work remarkably well—so well indeed that for several thousand years no one ventured either to question her all-sufficiency or to explore the foundations of her power. It was, however, intrinsically unreasonable to expect that a technique which served the purpose of showing up a hostile reasoner should be suitable also for the purpose of investigating nature; and when the empirical sciences developed this ambition, it was inevitable that Barbara's vogue should decline. The new sciences did not and could not employ her. She made, indeed, a bold bluff to persuade the world that a syllogistically proved conclusion should rank as an eternal truth and was entitled to predict the future of reality; she argued that if it was true that all men were mortal now, that was a real guarantee that every one would die forevermore.[1] Nevertheless the exploration

of nature by syllogistic methods did not prove successful, even though "inductive" logicians showed the utmost deference, not to say abject servility, to Barbara, and laboured incessantly to show that their methods attained to formal "validity" and "absolute" certainty. Barbara, moreover, when criticized on the ground of her empirical inadequacy, could always excuse herself by pleading that the fault lay with the "matter" of knowledge, not with its "form," leaving intact her claim to have described the "ideal of knowledge," once "absolutely true" premisses had been provided.

Consequently any really effective exposure of Barbara has to attack her on her "formal" side. Now on this side she is strongly entrenched behind the barbed wire of linguistic usage, being indeed based on a very fairly complete analysis of (Indo European) speech. Yet here, too, she is by no means invulnerable. For though she long deterred logicians from raising the searching question as to what guarantee the syllogistic form can yield that the verbal identity of its terms assures also the real identity of the objects they denote in their several contexts, it is clear that this assumption is vital to the syllogism's "validity." There is literally nothing to assure it but the identity of the middle term in the two premisses. But this need not be more than a purely verbal fact. If the middle term in relation to a particular minor (which may be a very exceptional case) develops a different meaning to the middle in its relation to the major, the syllogism breaks in two. Moreover, it is impossible to foresee whether this will happen until the attempt is made to use the middle term; and when it does happen, "material" knowledge of the case will always be needed to understand why the reasoning has gone astray. Hence the potential ambiguity of the syllogism's middle term (which may turn into actual ambiguity in use) must be regarded as a formal and a fatal flaw in the syllogistic form.

A further objection to the validity of syllogistic analysis arises from the doubt whether it is capable of representing the natural development of the meaning of terms in the growth of knowledge. For it is clear that wherever knowledge grows the meaning of the terms in which it is expressed must constantly be modified. It must be expanding or contracting, becoming vaguer or more exact and incisive. Hence the application to it of the postulate (law) of identity will become more and more disputable. In a progressive science, therefore, an argument based on the verbal identity of terms will always be precarious and will grow less and less convincing. This is why the empirical sciences are never impressed by accusations of inconsistency and seem often to revel in contradictions.

Nay more; it is not possible to fix meanings absolutely even in ordinary usage. For it is neither rational nor psychologically possible to enunciate a proposition without supposing that it will convey some novelty to the persons to whom it is addressed. Whenever, therefore "*S* is *P*" ceases to be an

empty form of words and becomes a real judgment, it must be held to change the meaning of its terms: it changes "S" into an "S-of-which-P can-be-predicated" and "P" into a "P-which-may-be-predicated-of-S." Thus one of the chief (though covert) presuppositions of Aristotelian logic, that of the fixity of terms, is revealed as a fiction which disqualifies it from representing actual thinking. The latter needs merely a sufficient stability of meanings and a sufficient familiarity with verbal meanings to enable the particular personal meaning of one interlocutor to be conveyed to another in an actual context.

2. We may next pay homage to the metaphysical logic which still cherishes the ambition of describing in and by thought the innermost meaning and actual course of reality, or even of prescribing its course to reality by an a priori analysis of thought. Its fundamental assumption is enshrined in the dictum of Spinoza that the order and connexion of ideas is the same as that of things; and of its methods Hegel may still claim to be the most imposing master.

As regards nomenclature, it may here be fitly denominated "Pythia," in recognition of the persistent oracularity of its responses and its reluctance to come off its tripod and to mingle in the rough and tumble of scientific dispute.

Her record, moreover, shows beyond question that Pythia possesses great powers of fascination, due not so much to the rationality of her reasoning as to her willingness to minister to the secret ambitions and desires of many philosophers. To raise the essential issue quite candidly and bluntly, why should it be assumed that the course of events must comply with human demands? Psychologically, indeed, the reason is clear enough. It would be charming if we had reason to believe it; but it would be a bold man who dared to ask Pythia for reasons. Methodologically, also, we are surely entitled to experiment with any hypothesis that is attractive and that would be helpful if it were true; still it is a far cry from this admission to a dogmatic assertion a priori that the universe is bound to comply with our intellectual (or other) demands. The chasm that yawns between the ideal and the real cannot be leapt in so facile a fashion.

The truth is that Pythia's procedure is in all logical essentials that of the so-called ontological proof of the existence of "God." She attempts to argue from the existence of a notion in the human mind to its realization in the real, and that without inquiring into the past history and psychological motivation that has generated it. This procedure has always been a stumbling-block to great but honest philosophers like Aristotle, Aquinas, and Kant. However often it is refuted it is always being revived, for the very cogent reason that the only alternative to its a priori procedure is verification by its working in experience, that is, a sheer empiricism that is felt to

be an intolerable insult to notions like "God," "infinity," "the universe," and "the absolute."

When Pythia's lovers condescend to contemplate the particular problems of logic, they invariably commit three major blunders. They imagine that truth must reside in the whole, and they taboo selection. Also they ignore the conception of relevance by which the practice of selection is justified in the sciences. Thirdly, they totally ignore the purposive nature of thought. For the rest, they are quite as deeply addicted to verbalism as is Barbara; and all the metaphysical "proofs" which appeal to the law of contradiction ultimately rest on the traditional meanings of words.

Although both Barbara and Pythia are continually confronted with the difficulty of avoiding metaphysics on the one side and verbalism on the other, they think they can agree in denouncing psychology. This does not in the least prevent them from making (dogmatically) psychological assumptions and retaining a great deal of (mostly obsolete) psychology in their texture. But they detest psychology, on the principle *odisse quem laeseris*, with the implacable hatred of a bad conscience.

3. Their attitude contrasts sharply with the purely empirical psychologic which substitutes judgments for propositions as the subjects of logical discourse, frankly seeks the co-operation of psychology and is willing to be a handmaid of the sciences. It does not attempt to lay down the law to them, but sets itself humbly to observe all that the other sciences do, and how, and how far, they succeed in accumulating precious stores of knowledge. Being thus devoted to the dirty work of labourious observation and scorned by the great majority of logicians, we shall have to call her "Cinderella." But some day, no doubt, the happy prince will come who will snatch her away from her kitchen-maidenly drudgery and raise her to reign by his side over a well-ordered and intelligible realm of truth. Meanwhile we must leave Cinderella to her humble functions and proceed to consider the fourth and at present the most aggressively vigourous of the prevalent conceptions of logic, namely, logistic.

4. Logistic would appear to be essentially a hybrid, nay a double hybrid. On one side of its ancestry it is a product of intercourse between the oldest logic and the most ancient of the sciences, namely, mathematics. But in some of its younger forms it appears to be the offspring of a further crossing between logistic and pragmatism. For what is called "logical positivism" seems to combine a pragmatist theory of meaning with an intellectualist conception of truth and a mathematical method of exposition. Whatever its exact parentage, moreover, the resultant attitude towards logic seems to be abundantly endowed with what the biologists call "hybrid vigour."

What shall be the familiar name we bestow upon it? It desires to be known as Analysis; but in view of the facts that more than one analysis

would appear to be always possible and that of late it has blossomed into "multi-valued" logics, the prefix "poly-" seems to be requisite for an adequate description. Let us therefore call it "Pollyanna."

Pollyanna's claims to be the only true and proper logic are based on several grounds. Barbara's intelligence was somewhat narrow and restricted to the relation of substance and attribute. But why, it was asked, should not other relations be subjected to logical treatment? Barbara, moreover, could juggle with only three terms at a time, a further indication of her limited capacity. Again she was grossly deficient in exactness.

Now, exactness is an ideal which has always had an uncanny fascination for the academic mind. It was supposed to mark the assumptions and procedures of the oldest and most assured of the sciences, mathematics, with a smattering of which every schoolboy had been tortured in every educational system for the good of his soul. Professional logicians, therefore, were not slow to recognize the sadistic possibilities of logistics. They made exactness, therefore, the first demand of "modern" logic.

Unfortunately, however, they were quite unable to say what they meant by it when asked to illustrate or define exactness in logic. They could only point with pride to mathematics, and affirm that logic and mathematics were identical.

But the same difficulty arose in mathematics also: what exactly did "exactness" mean there? It clearly does not mean either that mathematical objects exactly reproduce physical realities or that physical realities exactly exemplify mathematical ideals. Straight lines and circles and units are not to be copied from nature, for they are not found in nature; while all the physical constants, like the year, the month, and the day, are inexact and variable.[2] In vain did astronomers postulate that heavenly bodies must move in perfect circles—in vain did they pile epicycle on epicycle to render astronomy an "exact" science; they have been forced by their own facts to admit that their laws and formulas were only conveniences of calculation. Now Plato had recognized long ago that there was no exactness to be found in the sensible world; yet he continued to think of God as a mathematician. He should have added that when "God geometrizes," he does so very inexactly.

What is really meant by the exactness of mathematics is that mathematics is a science which can define its own objects, apparently without regard to reality. Mathematical truths primarily refer to ideal objects which the mathematician has himself created and defined. But in its relation to nature the mathematical ideal is a mere command, which may or may not apply. The rules of common arithmetic apply to a great variety of objects; but if we are wise we shall not expect four to result from the process of adding two drops of mercury to two others, or two lions to two lambs, or two to be the consequence of adding a bull to a cow. Nor should philoso-

phers flatter themselves that definitions are revelations of the essence which makes all things what they are and utterly independent of empirical facts. If a definition is not so formulated that it applies to something in reality, it becomes sterile, otiose, and in the end unmeaning; the only way of assuring that a definition will be useful is to allow the real to suggest the ideal which is embodied in the definition. This is what in point of fact mathematicians had sense enough to do. They allowed the ray of light to suggest the straight line and, as the word attests to this day, developed geometry as an aid to agriculture.

The importance of exactness in definitions is further restricted by the fact that in mathematics, as in every other science, knowledge grows and that the definitions have to keep pace with this growth. As vehicles of growing knowledge they too must progressively change their meaning. If they are too stubborn and refuse to expand, they have to be scrapped. But most scientific terms allow themselves to be stretched to the point of verbal contradiction. No physicist would dream of discarding the notion of "atom" because "atom" means "indivisible," and the modern atom has become a nest for a vast brood of problems. The usual way of extending definitions in mathematics is by analogy, which, notoriously, is not exactly a valid process. Absolute exactness, then, must be rejected as a useless fiction, at any rate in mathematics.

Mathematics will not support Pollyanna even in talking of greater or of smaller degrees of exactness. For to determine these either an absolute standard of exactness which we have found to be non-existent, would be requisite, or some immediate experience of a quality which occurs in varying degrees like the hotness of water or the sweetness of wine or the goodness of a joke. It would seem then that if Pollyanna wishes to assimilate herself to mathematics she had better not lay too much stress on her exactness.

Like Barbara and Pythia, Pollyanna declines to concern herself with the processes by which human knowledge is actually advanced. Hence she also regards propositions as her subject-matter, not judgments. But she is not content to take them as they stand and to leave them just verbal formulas. Her affinity with mathematics requires her to conceive them upon the analogy of mathematical functions. They have to be equipped with variables to which various values can be assigned, and thus "propositional functions" are introduced into logic. This, of course, raises a new question, namely, how the truth of a proposition is related to that of a propositional function.

This question is complicated by the fact that the meaning of a proposition cannot be ascertained until a "proposition" has been generated by choosing the variables which turn a propositional function into a proposition. For example, in "If A loves B, A will eat B," much will depend on

whether A is a goat or a man and whether B is a woman or a cabbage: also, if A is a man, on whether he is a cannibal. So it is clearly quite premature to discuss the truth or falsity of the proposition until its context and its meaning have been settled. This would seem to be the merest common sense, but the admirers of Pollyanna have strangely overlooked it.

They have overlooked also the difficulty of finding propositions which do not turn into propositional functions (or alternatively into fully particularized judgments) whenever an attempt is made to use them in real reasoning, as distinct from the artificial process of juggling with symbols and manipulating formulas. For a quarter of a century now I have been vainly begging them to produce (1) propositions of which the terms would not turn out to be variables on closer inspection, and (2) propositional functions of which the truth does not depend on the use made of them. Yet they continue to speak of functions which are "always true"; by this they can only mean functions out of which no false "propositions" can be generated by attributing to their variables values calculated to confute them.

Is not the natural inference from this situation a deep-seated scepticism as to whether propositions exist at all and whether in consequence formal logic is not a pseudo-science that has no objects? If we admit the analogy between logic and mathematics, and we may do this without admitting their identity, the propositional function seems intelligible enough. It is like a mathematical function, and must be treated like it. That is, it is a formula enclosing blanks, and these must be filled in to give it a meaning and a truth-claim. When this has been done it can be used, rightly or wrongly, successfully or otherwise. And when it has been used repeatedly, we can determine whether it is a good formula, which has enabled us to obtain true results or not. But whenever it was used, it was adopted by some one, and became a "judgment"; it did not remain a "proposition."

What then *is* a proposition in the doctrine of Pollyanna? And where in nature, outside of textbooks of logic, does it occur? These questions appear to be unanswerable. But what is usually called a proposition is merely a verbal formula which can be used in a great variety of contexts and for a great variety of purposes. Its meaning, its value, and its truth depend on its uses. There is apparently no means of ascertaining them apart from its uses. But if it has ever been used successfully, it remains potentially useful and acquires potential meaning and truth, that is, logical value. But as its uses are various, it is always ambiguous in the abstract, even though all its ambiguity may disappear when it is used in a suitable context. Pollyanna does not yet appear to have grasped this situation, even in her most advanced moods. Nor has she yet drawn the very necessary distinction between the potential truth of a propositional function (or so-called "proposition") and the actual truth of a purposive judgment. She has merely taken over from

mathematics her conception of truth-values, and is only very slowly realizing how inadequate it is for the purpose of representing the complexities of scientific reasoning.

Now, in mathematics it was natural enough that the truth-values taken for granted should be just true or false, and that as no question was raised *how* true they might be and no inquiry was instituted into how precisely "truth" and "falsity" were to be understood, they should be taken as absolute. It would be quite unreasonable to expect a special science to institute a critical examination of technical terms that do not belong to its special sphere of interests. It is not the business of mathematics but of logic (or epistemology) to discuss the nature of truth-values. So mathematics was quite naturally and properly content to take truth and falsity as the two mutually exclusive truth-values and to operate with its functions as if their truth or falsity alone concerned it.

But Pollyanna ought to have been more critical, and in fact the need for more careful discrimination was soon forced upon her. After all, propositions could not all be confidently asserted to be simply either true or false. Some claimed the superior dignity of "necessary truths," while others were denounced as contradictory or impossible. It seemed a dangerous concession to psychology to admit that when propositions were viewed as possible or probable, a human attitude towards them was indicated. Yet such admissions were lurking in such topics as the "modality" of propositions. Moreover, mathematics itself had developed a branch called the theory of probabilities, and it could hardly be denied that probabilities lent themselves to inferences. So the absolutely true and the absolutely false seemed to be driven into the position of limiting cases, to which the probable truths of the sciences aspired but never attained.

Pollyanna, therefore, had to admit that she had been too naïve. Her two-valued system of symbols was unequal to the complexities of science, and further values had to be introduced. It speedily becomes clear that there are in fact infinite degrees of probability between the absolutely true and the absolutely false. A consistent symbolic logic, therefore, should endeavour to devise symbols for them all. But when this is done, it becomes clear that the notions of absolute truth and absolute error are rendered otiose and may be scrapped, as was very frankly confessed by Professor Hans Reichenbach (now of Istanbul) at the recent Prague Congress of Philosophy.

In view of this admission it is difficult to see how there can be a scientific future, either for the two-valued logics, which operate merely with the values true and false, or for the multi-valued varieties so ingeniously constructed by Professor Lukasiewicz and the other Polish followers of Pollyanna. If the truth-values occurring in the sciences are essentially probabilities, the only logical

symbolism that can possibly be adequate for scientific purposes will have to be one in which the values vary continuously between the two limits of truth and falsity and admit of quantitative treatment. In this respect the present aspect of Pollyanna is not mathematical enough.

In other respects, however, she would seem to be too mathematical. For the true and the false are not the only values the logician is called upon to consider. He constantly encounters the unmeaning and the ambiguous, and has hardly yet begun to explore the vast fields of inquiry which they present. Probably relevance and irrelevance should also be added to the list of topics a thoroughly symbolic logic should endeavour to symbolize. But I cannot discuss the matter in this paper. They function, of course, as negative values or obstacles to the attainment of truth-values; but most logicians have not yet realized the pitfalls which are dug in their path by the unmeaning on the one side and the ambiguous on the other. Hence the remarks that follow should be taken as an elementary introduction to an intricate but highly important subject.

As it is, many logicians still imagine that the unmeaning can be disposed of simply by denying its existence. They think that the "law of excluded middle" justifies the assertion that every thing must be either A or not A, and they ignore the alternatives "both" (ambiguity) and "neither" (meaningless), which even Barbara officially admitted, though she troubled little enough about them.

There is, moreover, a good deal of confusion about the logical status of tautologies and contradictions. The capital error which the formal logics have committed in their dealings with both of these is to assume that their nature can be determined by mere contemplation of the verbal form of propositions which look tautologous or contradictory. They have sought to avoid in this way the trouble of inquiring whether the apparent tautologies and contradictions were real. Actually, however, this assumption is very often ruinously false.

Tautologies were long held to be meaningless and disregarded as such, though there is now a strong movement to regard them as the very purest forms of formal logic. Actually, however, it is only the forms that are meaningless: the actual tautologies, from "I am that I am" downwards, are full of meaning, and indeed are usually very pointed remarks. If his etiquette permitted the logician to inquire into the meaning of the persons who utter tautologies, this would speedily appear.

Contradictions, on the other hand, when their existence has been ascertained, really are devoid of meaning, though this fact of human psychology has been most disastrously obscured by mistaken attempts to treat them as proofs of falsity. Here, too, the logician's first duty should be to get hold of a genuine contradiction. Most contradictions are merely verbal;

and it should be the logician's duty to go behind the verbal form and to ask the propounders of such propositions what they meant.

He would then discover that what was meant was not contradictory, even though the meaning was expressed in a paradoxical and perhaps unfortunate manner. He might even discover that (verbal) contradictions normally arise in the progress of a science and are part of its growing pains. They arise out of the fact that old words have to be used as vehicles of new meanings and transform and supersede their traditional meanings. Hence it is pedantic folly to object to the Darwinian conception of species that species are immutable and to the modern conception of the atom that the atom is indivisible. Such contradictions, when they appear in actual contexts, are like Mahaffy's famous Irish bulls, "always pregnant." They are challenging, picturesque, and paradoxical ways of enunciating novelties of thought.

Owing, however, to the prevalence of muddle-headedness in human thinking, genuine contradictions may occur. They occur when a reasoner loses the thread of his train of thought and blunders into asserting two (or more) propositions which he can not believe together and did not mean to assert together. He can then (sometimes) be brought to realize this by having it pointed out to him that his propositions are "contradictory." He must then amend his statement. He may choose to abide by one of the contradictory propositions and to drop the other. He may explain that in the way he meant them they were not really contradictory. Or, lastly, he may scrap both and take up a new position. If he does this, it will be because he realizes that his old position was untenable and his total meaning null and void.

But the proper inference even from this last situation will not be that what he said was false but that it was unmeaning. He must be told, therefore, that he has said nothing and requested (if possible politely) to say something. He should try again and propound a meaning that can be true or false. Thus, for the very reason that genuine contradiction destroys meaning, it cannot serve as a test of falsity: it only leaves the field clear for a fresh assertion. An apparent contradiction creates at most a prima facie case for suspecting a lack of meaning; in general, however, contradiction is cogent evidence for the contention that logic cannot ignore the unmeaning.

Finally, we should not leave the subject of the unmeaning without remarking that next to unverifiability one of the commonest causes of meaninglessness is failure of application, shown by abstract propositions which have acquired logical status in connexion with theories and lines of thought that have a record of good service in the past.

Such propositions are specially common in mathematics, where it is possible to develop mathematical apparatus far ahead of the present needs of the other sciences and to pursue long trains of hypothetical reasoning for which at the time no applications are known. But these researches are

developments of assumptions which have been found to be applicable; and it frequently happens that applications are subsequently found even for the most useless mathematics. If a branch of mathematics really proved so completely sterile that it did not even amuse any one but its author, it would be abandoned as unmeaning.

It has long been a logical custom to fail to distinguish between ambiguity and lack of meaning. They are usually lumped together, because they are equally incompatible with the simple disjunction of "true or false" and equally defeat the logician's desire to draw a simple and valid conclusion. When we are presented with an ambiguous proposition we cannot tell what it means, simply because there is no "it." We cannot therefore argue from it. A plurality of meanings between which we have no means of choosing, is as baffling as a complete absence of meaning.[3]

Yet it should have been plain enough that the two cases are really different. An ambiguous proposition defeats the logician's ambition by expressing too many meanings at once, without giving him any means of choosing between them; whereas the unmeaning proposition defeats him by having no meaning at all. Hence, with the unmeaning the logician can do nothing at all; it simply baffles thought. But the ambiguous should prove a great stimulus to inquiry, wherever there is a real desire to know. This very important difference should not be slurred over and is not disposed of by calling all mention of desires, whether to know or to conclude, "psychological."

The most important form of ambiguity is a virtue inherent in the construction of language and of any other symbolism which serves the purpose of communicating meaning. Words and symbols may be used more than once, and from this fact they derive by far the greater part of their usefulness. In virtue thereof they acquire an inherent meaning, a verbal meaning as opposed to the original personal meaning of the people who invented them; and this fits them for general use. They are all in principle universals, capable of use on an infinity of occasions, and capable of serving an infinity of purposes. If they lacked this virtue, their utility would be destroyed. A language composed entirely of nonce-words would be unintelligible.

But the *revers de la médaille* is that words have the defects of their qualities. In virtue of their very merits they are all what is, somewhat stupidly, called "ambiguous." For if a word is used a second time it is applied to a situation different more or less from the first and this meaning will differ slightly from the first meaning. The meaning in the two cases will not be absolutely identical. Often it will differ and develop greatly. Technically, therefore, the logician will always have a right to declare that it has been used in two senses and has become ambiguous.

This, however, seems a very unwise use of the notion of ambiguity. For

in the first place such ambiguity is not a vice, but a virtue, of thought; and, secondly, it cannot be avoided. It would therefore be much better policy to call it plurality of senses[4] and to point out that it is not an obstacle to communication of meaning but a condition of thought, that it is potential and need never become actual in a context, and that there is a much more dangerous situation to which the term "ambiguity" should be restricted.

This situation arises when the words used to convey meaning in an actual context may be construed in more than one way, not in the abstract, as a verbal formula, but in their actual context. We may thus be at a loss how to take them, in doubt whether we apprehend the meaning intended, and unable to decide any question about them. They may be true in one sense and false in others, or even quite inapplicable and therefore unmeaning.

A little anecdote may illustrate better than long disquisitions the kind of difficulty with which this sort of ambiguity confronts formal logic. It was my privilege not so long ago to attend a meeting of logicians, mostly "modern," which was completely posed by the question "If A loves B and B loves C, what is the relation between A and C?" After an awkward pause I ventured to suggest that probably A and C would hate each other; but clearly this suggestion was not based on any kind of formal logic and could not be stated as a valid argument. It rested merely on human psychology. Intrinsically, however, the question was unanswerable, for all its terms were hopelessly indeterminate and infinitely ambiguous. Nothing was known as to who or what A, B, and C were—whether men, women, or children, dogs, cats, or angels. The relation, therefore, inquired into would naturally dissolve into a collection of alternative possibilities: its whole meaning would depend on how these variables were filled in and how much allowance had to be made for moods and varying circumstances. In any actual case the relations would be fully particularized and individual: they would depend on the character and circumstances of the parties, not on any doctrine a logician might have been pleased to lay down. It is impossible to see how such doctrines could be helpful, but plain that if we tried to go by logic we might easily go wrong.

Very troublesome forms of this (the proper) ambiguity arise when words are taken (as they are regularly in all the forms of formal logic) to guarantee that there is no significant difference between two contexts in which they are used. They may then easily become the sources of far-reaching errors. If we take the certainty that "eggs are eggs" as an a priori warrant of the quality of our breakfast eggs, we court disappointment. If we are wise, therefore, we shall realize that we cannot always argue from verbal identities or even from identities which may turn out to be merely verbal. We should always be prepared to find, therefore, that the terms of any argu-

ment have something of the chameleon about them and turn ambiguous when we try to use them. They are always transferred from one context and applied to another; and circumstances alter cases. It is the liability to this sort of real ambiguity which renders all a priori inference precarious and compels us to ask for empirical verification, even of the most validly proved conclusions.

Thirdly, there is a sort of ambiguity in which alternative meanings are not merely present but are also actually intended. When a proposition is meant to be understood in more than one sense, its ambiguity is not accidental and involuntary, but intentional and often malignant. This sort of ambiguity should be distinguished as equivocation, and it is common enough in diplomacy, politics, oracles, jokes, and some sorts of philosophy.[5] Practically the only way of treating and curing these last two sorts of ambiguity is to ask which of the alternative interpretations was intended; but would this be playing the game of formal logic?

What now is Pollyanna to do about all these complications of her enterprise? In principle she ought to undertake to symbolize them all. Perhaps this is theoretically possible; but it is evident that to succeed she would have to add largely to her store of "baleful signs." In addition to signs indicating whether a proposition or set of propositions, followed, truly or falsely, from another, she would have to indicate what degree of probability was claimed for the inference. She would have to indicate also whether the process was really or only apparently meaningful, really or only apparently contradictory, and really or only apparently relevant. Lastly, she would have to exhaust the possibilities of the various sorts of ambiguity. This alone would imply not only an exhaustive knowledge of past uses but also prophetic insight into the whole future.

I confess that I do not envy Pollyanna her self-imposed task. My imagination is staggered by the contemplation of the pages of the Pollyannic logic of the future. Compared with these the most formidable chapters of Whitehead and Russell will surely seem simple, easy, popular and unscientific. But it is when I endeavour to forecast the possibilities of teaching this logic of the future that I fall prey to the most furious doubts. Is Pollyanna really the paragon of hybrid vigour we have taken her to be? Is she not rather a diabolic illusion, a malign and cancerous growth that will prove the death of logic? And are the logicians that follow in her train treading in the path where reason leads? Or are they actuated by the suicidal impulse of Norwegian lemmings? Until these questions are answered intelligently and convincingly, I, for one, prefer to take shelter under Cinderella's wing.

NOTES

1. Cf. my article, "Are All Men Mortal?" *Mind*, n.s., XLIV (1935), 204-210.

2. Except where their invariance is really a postulate of scientific method. For example, the velocity of light is taken to be constant; but it is a curious fact that the empirical measurements of even this "constant" have successively yielded a diminishing value. This may be connected with the theory of the "expanding universe," to which, it should be remembered, the alternative is that all the constituents of the universe are shrinking. The conservation of matter and energy are now widely recognized as just methodological postulates, too.

3. Cf. A. Sidgwick, *Elementary Logic*, p. 108 n.

4. Or what Alfred Sidgwick calls "indefiniteness." Cf. my *Formal Logic*, pp. 26–28.

5. Occasionally, also, in law, as in Judge Carew's decision in the Gloria Vanderbilt case. When the judge was asked what his cryptic ruling meant, he replied, "It means exactly what it says. It was designed to keep you from knowing or finding out." No formal logician has even been half so candid!

Part Seven

SCIENTIFIC METHOD

INTRODUCTION TO PART SEVEN

Hugh McDonald

Schiller regarded knowledge as future oriented, not past oriented as it was for many ancient and modern philosophers. Knowledge is less concerned with a priori causes and origins for Schiller and more with results, i.e. predictions of subsequent and future behavior of scientific entities. This perspective reflects his pragmatic outlook and its orientation toward science. Science has achieved highly accurate predictions through respect for the results of experimental evidence. This outlook ties in well with his model of values as first philosophy, i.e. the basis of knowledge in human values, for its emphasis is on predictive value and the useful results for humans of the scientific enterprise. The pursuit of such knowledge has as its purpose human goods and ends: it is ultimately regulated by ethical concerns in the sense of valued consequences. Scientific knowledge is an instrument and thereby a means to an end.

> Reality, therefore, and the knowledge thereof, essentially presuppose a definitely directed effort to know. And, like other efforts, this effort is purposive; it is necessarily inspired by the conception of some good at which it aims. Neither the question of *Fact*, therefore, nor the question of *Knowledge* can be raised without also raising the question of *Value*. Our 'Facts' when analyzed turn out to be 'Values,' and the conception of 'Value' therefore becomes more ultimate than that of 'Fact.' Our valuations thus

> pervade our whole experience, and affect whatever 'fact,' whatever 'knowledge' we consent to recognize.[1]

Humans would not pursue knowledge without some goal or good in view: "there is no knowing without valuing."

Schiller argues that humanism "must insist upon the permeation of all actual knowing by interests, purposes, desires, emotions, ends, goods, postulations, choices, etc. . . ."[2] "Whatever is truly knowledge is useful, and whatever is not useful is not truly knowledge, while in proportion as any alleged knowledge is seen to be useless it is in danger of being declared false."[3] Of course, Schiller does not believe that all knowledge and science is concerned with investigation of values, and not particular subjects such as plants in botany. Schiller recognizes that subject matter must rule our inquiry to some degree. We cannot investigate mathematics through an inquiry into ethics. But he insists that such areas of human knowledge have human purposes as their foundation. So his intent is to say that knowledge has a ground or basis in human values and that it cannot be separated from our human organs of knowledge. Knowledge is regulated by its ground, human goals and values. Schiller argues that, "our knowing is not the mechanical operation of a passionless 'pure' intellect. . . ."[4] Anything entitled to be deemed knowledge must be useful for life and hence have as its fundamental principle a conception of its practical value as a criterion of the purpose of such knowledge. Even pure knowledge has one eye on practical benefits in this view. "If the pursuit of knowledge really aggravated instead of relieving, the burden of life, it would be irrational." Schiller also spoke of the "scientific value" of Darwin's evolutionary theory, and of "religious value" and "moral value," that is, distinct kinds of value differentiated by diverse subjects. If these sciences receive their purposes from human needs they payoff with benefits to life in various ways.

Like the other pragmatists, Schiller is critical of the complete separation of theory and practice, of knowledge from its value.[5] He rejected the separation of theory and practice as a hangover from Greek philosophy no longer applicable in modern conditions. But he goes further in arguing for the inseparability of fact and value. Schiller proposed the radical view that facts and values are closely interrelated, since values are the foundation for facts, and even for the real, which he considers a value. Schiller is aware of the distinction of questions of existence and questions of worth, but attenuates the distinction. As the etymology of fact indicates, "fact" is from *factum* a doing or making. Facts are not "given" but "made," But such a doing or making is a teleological activity, directed toward some human good. Ultimately facts embody human good as accomplished ends or worthwhile results. However, a fact as a making is the making of a human good, so the *process* of

"making reality" is the same as making "goods," although value is the ultimate ground of the making as a means to an end. "For our interests impose the conditions under which alone Reality can be revealed. Only such aspects of Reality can be revealed as are not merely knowable but as are objects of an actual desire, and consequent attempt, to know."[6]

Schiller scored the absolute separation of facts and theories as a new dualism. He argued that facts can become theories and theories have an element of fact. Facts in the lab involve careful alteration of conditions to create new knowledge. Thus he pointed to the epistemological status of action in his emendation of empiricism, a further point in favor of the critique of theory and practice. Like the other pragmatists, he endorsed the experimental method as the only true method of knowledge, even including mathematics. Complete knowledge makes reference to purpose, i.e. teleology, of which mechanical explanations are supplemental. Knowledge requires realization of ideals and thus a goal or purpose, viz. achieving better and more accurate results. However, he regarded knowledge as knowledge of facts, and thus was not at total remove from scientism and positivism, despite his critique of them. Humanist metaphysics is to be derived from the sciences, including the evolutionary view. Facts, then, are the product of scientific investigation, but, unlike for some positivists, are not objects in the world. Epistemology should not be confused with metaphysics, although it has priority over it.

Schiller thought that all philosophers agree that human knowledge is built up out of experience, but that experience alone does not constitute reality. Schiller argued that experience is the experience of a self and that more "objective" facts had to be derived and constructed from such personal experience. This involves interaction with the world, which changes even in the process of being known. Thus Schiller rejects both foundationalism and any a priori in epistemology. Rather, some hypotheses are refuted by experience while others, as Nietzsche put it, are judged "provisionally valid." Knowledge is slowly built up and in the process some highly confirmed postulates may achieve the rank of axioms. Determinism ignores the selective process in research and the choice involved in interaction. Empiricism misses the active side of investigation.

It is clear that the influence of the idealists, especially Kant and his followers, left its mark on Schiller. Human good, not experience, has the last word. He notes that if humans are defective, so is our entire knowing[7] and thus there is a human element in all knowing. Indeed, he went so far as to deny a separate study of epistemology was needed, since its functions were covered by logic and psychology. But this speculative possibility is irrelevant if man's needs and purposes are fulfilled. In other words, our knowledge may be far from absolute and nevertheless useful. The study of values, then, stands

as the basis or foundation of other sciences.[8] Values mediate knowledge but the latter, in the form of truth, mediates the real, reality. Humanism results in a "beneficent simplification of the whole theory of knowledge,"[9] including a reform of philosophy, especially logic. It also serves as a stimulus to science and useful knowledge, and contributes to ethics and religion. The humanist theory of truth, he believes, answers the skeptic.

Schiller broke new ground in his treatment of scientific method. Several commentators have accused him of "relativism," but this view misses the forest for the trees. Some Schiller texts indeed mention the relational character of knowledge, but this should not be confused with relativism, despite his sometimes misleading language. On the contrary, taking an idea of James and combining it with his value philosophy, Schiller developed the position of epistemological meliorism. Meliorism in James is primarily metaphysical, and he contrasted it with cosmic optimism, as in Leibniz, and pessimism, as in Schopenhauer. Although the world is not perfect it can be improved, especially by human action. Schiller, noting the progressive character of our knowledge, argued that this model was especially appropriate for the development of human learning, particularly science. Science is a progressive affair in which new knowledge replaces or refines older. Thus human knowledge is improved, or ameliorated over historical time. The accuracy of knowledge is thus in a relation—which does not mean relative—to the conditions at the time.

There are many factors in the improvement of knowledge. These include the overall results of research, reigning theories, the refinement of instruments, which extend our senses, and particularly the humans organs of knowing and their limitations. Memory, language and imagination are also required in science, the latter in advancing new hypotheses and theories. Hence we cannot eliminate the personal element from knowledge. Personal biases of course have no place in science, but bias must be evaluated, a task for logic.

Anticipating Kuhn, Schiller noted that new scientific paradigms might make older knowledge irrelevant, dated, or even false. Choosing between competing theories and hypotheses necessarily involves (e)valuation of their relative merits with respect to such factors as prediction. The better more accurate prediction argues for one theory as better than another. Thus value enters into science in the form of improved theories and hypotheses. Abstraction is also a form of selection. Epistemological meliorism combines the notion of progress, development, and accumulation of facts with the value framework developed in "first philosophy." The notion of scientific progress is incompatible with relativism, and Schiller clearly believed in the former, that is, the possibility of meliorism in epistemology. Science is historical and progressive, since it can only advance by growing.[10]

Schiller argued that there is basically only one method of knowing, the scientific method. Thus it is normative for the special methods of the different sciences. It is by examining the scientific method that our knowledge can advance. "Pragmatism would find an almost inexhaustible field of exploration in the sciences, by examining the multifarious ways in which their 'truths' have come to be established, and showing how the practical value of scientific conceptions has accelerated and determined their acceptance."[11]

He also noted that some sciences can control their experiments more closely and carefully vary conditions, so that they can test for relevant variables. History cannot vary these conditions in the lab, marking it as a unique science. This activity is purposive, and involves aiming at ends in view. Facts are never "given" but must be derived from the mass of irrelevant material by selection. Scientific experimentalism may involve risk, since we can never know absolutely. However, it is the only possible method of knowing. Even mathematics has grown, and added alternative geometries by the experiment of varying the postulates or axioms from which it deduces consequences. Knowledge accumulates gradually, rather than by one decisive experiment (but compare Einstein's prediction of the "bending of light" and its confirmation in the 1919 eclipse). The laws of science grow from hypotheses to covering theories to highly confirmed laws with more and more observations and their increasing success in prediction. It is their predictive success that warrants acceptance as belief.

Schiller criticized a priori methods in favor of experience, but added the evaluative element, meliorism. Experience must be refined by science in a gradual improvement in our knowledge, which involves experiment, prediction, verification and close study of consequences. Thus experience is only one element in the scientific method, since experiments involve action in view of an end, variation of conditions and other factors. Like Peirce, he argued that there is a fund of knowledge that is not in doubt that serves as a starting point for investigation. It is only if we have cause to doubt any of these that they in turn become an object of investigation. In principle, all facts and theories can be revised. Facts and hypotheses are provisional unless highly confirmed and even the most highly confirmed laws of science can be overturned (Ptolemy, Copernicus) or modified (Newton, Einstein).

Schiller also noted the use of ideal fictions such as a "frictionless surface" and Einstein's elevator in science, which he assigned to useful ideals and abstractions. Thus science sometimes achieves success by abstracting from real world conditions. Universals and concepts are species of such useful fictions. But abstractions can be misleading. "Knowing is essentially a rational, purposive *activity*, and to leave out the teleological and the activity factor, as intellectualism does, alike in its sensationalist and in its rationalist forms, is a false abstraction and a fatal mistake."[12]

Schiller has an essentially empirical and humanistic epistemology, modified by pragmatism. However, of experience he remarks that "its surface-value will not enable us to meet our obligations: we are compelled therefore to discount our immediate experience, to treat it as an appearance of something ulterior which will supplement its deficiency."[13] It can be seen from this passage that experience does not have the last word for Schiller; experience must be judged by something more basic. Again, he speaks of the "final evaluation of experience." This separates Schiller decisively from James, Dewey, and C. I. Lewis, for all of whom experience is basic, although each of them argues against the subjective turn in experience. Although Schiller speaks of Pragmatism as involved with theory of knowledge, he views Pragmatism as a subsidiary view to his own Humanist stance. His theory of knowledge then is based in turn upon values and any study of values as a field of knowledge requires valuations.

Notes

1. "The Ethical Basis of Metaphysics," this volume, p. 133.
2. "The Definition of Pragmatism and Humanism," this volume, p. 51.
3. "Useless Knowledge," *Humanism*, p. 41.
4. "The Ethical Basis of Metaphysics," this volume, p. 132.
5. "The Place of Pessimism in Philosophy," this volume, pp. 157–58.
6. "The Ethical Basis of Metaphysics," this volume, p. 133.
7. "Preface," this volume, p. 39.
8. "The Ethical Basis of Metaphysics," this volume, p. 127.
9. "Preface," this volume, p. 32.
10. "Scientific Method," this volume, pp. 747–48.
11. "Preface," this volume, p. 36.
12. "Scientific Method," this volume, p. 713.
13. "On Preserving Appearances," *Humanism*, p. 193.

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THE BIOLOGIC OF JUDGMENT

§1. The Central Position of Judgment.

Judgment may justly be regarded as the central theme of logic. For, until we come to it, there is nothing which can claim truth or be convicted of error.[1] And after we leave it we get nothing but concatenations of judgments in inference and proof. Thus Judgment is the central focus to which all the paths of logical inquiry converge, the decisive point where the conflicting logics meet to fight out their differences, and the turning-point whence they diverge into fertility or futility. Naturally, therefore, it has many aspects, and opens many vistas: it can be approached by many inquiries, viewed on many sides, discussed in many contexts.

For a logic, however, which sets itself to study the course of actual thinking, the natural starting-point for its account of Judgment will be a description of the circumstances under which, in real life, Judgment actually arises—the vital situation in which we find ourselves impelled to judge. Having grasped the realities which underlie logical debates, it may proceed to discuss the other aspects of Judgment and the many questions which have been raised about them.

Logic for Use: An Introduction to the Voluntarist Theory of Knowledge (London: G. Bell and Sons, 1929), pp. 193–207.

§2. The Forerunners of Judgment.

Our account of the function of Judgment in our mental life will, however, have to start a long way back. For there is much thinking before there is any judging, and much living before there is any thinking. Even in highly developed minds judging is a relatively rare incident in thinking, and thinking in living, an exception rather than the rule, and a relatively recent acquisition.

For the most part the living organism adapts itself to its conditions of life by earlier, easier, and quicker expedients. Its actions or reactions are mostly 'reflex actions' determined by inherited habits which largely function automatically and are inaccessible to direct conscious control. Moreover, the organism is very far from resembling the fabulous *tabula rasa*—from being an impartial and indifferent recipient of external stimuli. It is intensely *selective*, and responds to some while ignoring others; it is full of 'prejudices', which prescribe the forms a stimulation must take to be noticed; it is imperious in the *demands* it makes upon its experience.[2] So it finds itself equipped, quite lavishly, with impulses to act and to take stimulations in certain ways, and with urges that are called 'instincts', without having more than the dimmest consciousness of the reason for them or realising their function and rationality. Nevertheless, these reflexes, instincts, and impulses are biologically valuable, and indeed indispensable; they have been shaped by the organism's mode of life, and generally suffice, under ordinary circumstances, to preserve its life and to perpetuate its kind. They are, therefore, generally speaking, salutary; though it is worth noticing that habits, instincts, and impulses are adaptations to the past rather than to the present conditions of life; consequently they get out of gear whenever the mode of life changes rapidly. The organism is equipped further with a variety of sense-organs, which also have been evolved in, and remain relative to, its past life. Their apparent function is to put it into relation with what is practically taken to be an external world with which it has to come to terms. These sense-organs are not infallible, being liable to various illusions and hallucinations under abnormal conditions; but as a rule we can trust our senses not to deceive us more safely than we can trust our logical faculties.

The deliverances of our senses, moreover, are not only relative to our past life but also affected by it; they naturally perceive the present in the light of the past. This has the great advantage of incorporating past experience in present perception, but also renders it liable to perpetuate past errors. Theoretically it degrades 'pure sensation' into a fiction of *ex post facto* analysis which could not conceivably occur more than once, and does not actually occur at all.

It follows from this elaborate and admirable organisation of adaptive responses to stimulation that organic life might proceed without thinking altogether. It might present the appearance of a smoothly flowing sequence of perceptions, reflexes, instinctive and impulsive acts, in which there was no need for anything like thought or reason at all. This is, in fact, the way in which most living beings carry on their life, and the plane on which man also lives most of the time.

§3. The Genesis of Thinking.

Thought, therefore is an abnormality which springs from a disturbance. Its genesis is connected with a peculiar deficiency in the life of habit. The latter is admirably adjusted to *stable* conditions, to which it can respond with regular and stereotyped reactions. But what if the conditions should grow variable? The organism must then vary its responses and live by reactions which are modifiable and plastic. It can no longer prosper with machinery which works in a uniform mechanical manner and is insensitive to minor differences. The fish that is organised to snap at every worm and every fly will presently find that it has swallowed one that had a hook inside it. Thus an organisation which achieves adaptation only to the broad general outlines of a situation and fails to distinguish its individual peculiarities no longer suffices.

Whenever, therefore, it becomes biologically important to notice differences in roughly similar situations, and to adjust action more closely to the peculiarities of a particular case, the guidance of life by habit, instinct, and impulse breaks down. A new expedient has somehow to be devised for effecting such exact and delicate adjustments. This is the *raison d'être* of what is variously denominated 'thought', 'reason', 'reflection', 'reasoning', and 'judgment', and it is the real clue to the biological value of logic.

§4. Thinking and Brain Development.

Thought is the characteristically (though not exclusively) human expedient, by cultivating which man has established his dominion over the earth. It arises quite late in the evolution of life and has rapidly succeeded. Its outward and visible sign is brain-development; for a life of mechanical reflexes and automatisms needed very little brain, merely enough to innervate and co-ordinate the motions of the limbs. The great bulk of the modern brain is needed to obtain the variable and plastic responses which adapt action to particular situations and display intelligence. Accordingly,

ever since mesozoic times there has been a development of brain throughout the animal kingdom. The monster reptiles required very little brain, because they led an almost completely automatic life and could afford to be very stupid; so creatures with 100 feet of extension like *Diplodocus carnegii* could do with a brain no larger than a lead pencil in their heads, though they needed a larger ganglion behind to wag their tails. Similarly, the *Titanotheres*, the early ancestors of the rhinoceros, had only about one-eighth of the brain their descendant has, although nowadays the latter is reputed to be one of the stupidest of modern mammals, and it would hardly be an intellectual treat to meet one.

Brain development, then, has paid all along the line, especially in the human ancestry. It is, however, a little puzzling to find that the relatively vast human brain was reached quite early in palaeolithic times;[3] the most probable explanation of this fact is that now the natural selection of the fitter individuals is so seriously hindered by the conditions of civilised life that brain development has ceased, or even become retrograde. It must also be admitted that the correlation of intelligence with brain encounters difficulties in detail: Leibniz, Gambetta, and Anatole France had very small brains, and though Bismarck (a big man) had a big brain the size record is held by a hydrocephalous idiot!

§5. Why and When Thinking Pays.[4]

Still, on the whole, we can make out why thinking pays. The thoughtful, intelligent action understands and handles the particular situation better and more discriminatingly than the mechanical response of habits and reflexes and can be adjusted better to its particular features. It thus renders possible a response which is more adequate and salutary, biologically. And this has happened so often that the tribe of (potential) thinkers has multiplied and the habit of thinking (on occasion) has established itself.

Thinking, however, is not so much a substitute for the earlier processes as a subsidiary addition to them. It only pays in certain cases, and intelligence may be shown also by discerning what they are and when it is wiser to act without thinking. For thinking always consumes time, and in emergencies we may not be able to afford that, while prompt action of almost any sort may mean salvation. It is quite possible, therefore, to overdo thinking, and natural selection will then repress excessive thinkers. Thus the cave man who deliberated whether he should run away from a cave bear or the modern philosopher who carried his imitation of Socrates to the pitch of meditating on one leg in crossing a crowded street would both be abusing their powers of thought in a way conducive to speedy elimination.

The ordinary man, however, is not so foolish. He only thinks when he has to, and neither often nor long enough, which is why he incurs philosophic rebukes for the rarity of his 'rational' actions. Philosophers, however, have very mistaken ideas about rational action. They tend to think that men ought to think all the time, and about all things. But if they did this they would get nothing done, and shorten their lives without enhancing their merriment. Also they utterly misconceive the nature of rational action. They represent it as consisting in the perpetual use of universal rules, whereas it consists rather in perceiving when a general rule must be set aside in order that conduct may be adapted to a particular case. However, whether occasions for thinking are frequent or relatively rare, they are at any rate common and vital enough to make thinking a very important accomplishment; it is well worth while, therefore, to investigate its nature.

§6. On Stopping to Think.

(1) The first and most difficult step in thinking is *stopping to think*, i.e. the inhibition or arrest of the natural impulse to react at once. This is difficult because we are constructed for prompt action: the whole lower and more primitive part of our equipment drives us into action, and it is clear that for very many of the ordinary occasions of life the guidance of impulse suffices. Indeed, if we had to choose, we could more easily dispense with our thinking than with our impulses, habits, and reflexes. The power to abstain from instant action, in order first to look, watch, and deliberate, was probably acquired by man when he first took to stalking game; but reflective action still goes sorely against the grain of the ordinary man.

§7. The New and the Old in the Thought-Situation.

(2) If we have succeeded in controlling our impulse we get a breathing space in which to consider the actual situation. Now if this is really a situation which demands thought, and *ex hyp.* it was able to arrest action, it will always appear as a mixture of new and of familiar features. For, if it had seemed *wholly* new and unprecedented, it would be merely paralysing to both thought and action; if it had seemed wholly familiar it would not have arrested action, but have been dealt with in the habitual way. A situation, therefore, which evokes thought will always seem to be *partly* new and different from anything ever experienced before; and yet not so hopelessly so as to baffle thought.

It will be a *problematic* situation, that raises questions, arouses doubts, induces hesitations, and suggests alternatives; yet it will also suggest analogies, hypotheses, and interpretations to cope with it. The first problem that presents itself will be, What is it really and truly and *essentially*? I.e. what is its *most important part* for us, viewing it as we are, with the purposes we have? Are its likenesses with the past more 'essential' than its differences? And in either case to what likenesses and differences shall we attach importance? And how shall we extract from the past guidance for the future? It would seem that we always have a choice between emphasising its novelty and its familiarity. We can view it either as an old situation in a new development or as a new situation in a familiar light; we can think it as a new case of an old truth or as a novelty to be tamed and reduced to established precedents. Actually the situation will usually be complex enough to warrant either interpretation and to render choice far from easy: in practice, however, it is usually more urgent, and also more interesting, to classify the new than to modify the old. Whichever alternative we prefer, we are essentially concerned with viewing the present situation in the light of pass experience.

§8. 'Analysing' the Situation.

(3) So we set ourselves to 'analyse' it. This means inquiring what it is, in the sense of how it is to be *named*, or with what words chosen out of the extant resources of language is it to be described *for our purpose*? The latent implication of this procedure is that, once our problem has been duly labelled, the conventional meanings of the words we have used will be a guarantee that its future behaviour will conform to our expectations and enable us to make predictions.

This, however, is sometimes an illusion. For the very case we are considering may force upon us a modification of the terms with which we label it. It is no use arguing that this *ornithorhynchus paradoxus* cannot lay eggs because no marsupials do, or that radio-activity cannot be due to the break-up of atoms because matter is indestructible, or that an origin of species is impossible because it contradicts the very notion of 'species': the history of science has so often and so flagrantly shown the insecurity of arguments resting merely on the analysis of verbal meaning that philosophers should be growing afraid and ashamed of a priori metaphysics which are nothing but disquisitions on the assumed meanings of words.

§9. Judgment Essentially Experimental.

The truth that is overlooked is that in actual thinking all the terms we apply are used *experimentally*. The 'subjects' of the various judgments we tentatively formulate are all extracts from the total situation which strike us as significant: the 'predicates' all indicate experiments with these subjects which seem to us worth trying.

Thus every predication should be conceived as an experiment, which tests at one and the same time an interpretation of the situation inquired into, and the 'validity' (i.e. value) of the terms by which it is analysed. The judgment which affirms it puts an end to a more or less prolonged period of doubt and hesitation, and implies that it is preferable to more or less numerous alternatives; but it is only a provisional solution of the problem, and whether its consequences will come up to expectation and the terms of its 'analysis' stand firm remains to be seen.

§10. Non-intellectual Influences in Judgment.

It is a mistake also to represent any inquiry which terminates in a judgment as a cold, calm, dispassionate verdict of pure intellect. So long as we pander to this traditional fiction we shall never understand either men's devotion to truth-seeking or the fatal facility of their lapses into error, or the pertinacity with which they cling to errors when once they have committed themselves. Moreover, it stands to reason that any inquiry must be *interested*, and that a lack of interest is anything but a sure guarantee of truth. Finally, it follows from our account of the genesis of thinking that something 'striking' and emotional must have happened to interrupt the smooth flow of experience and to shock us into thinking. No situation would be inquired into, i.e. questioned, if it did not seem questionable. Consequently no question, scientific or other, could conceivably arise unless it could somehow make a personal appeal to a mind that raises it. The theory of 'disinterested' knowing fails to explain how any knowledge is possible.

Furthermore, the inquiring mind is filled not only with questions but with other contents it has been considered improper to notice. It is filled also with hopes, fears, wishes, and commands, and all of these play important parts. Hopes and fears steer the course of exploration; wishes adumbrate its end. *Postulates* serve as the great guiding 'principles of rationality', which are necessities of method and verifiable only after they have been assumed. In addition, every mind inevitably *makes demands* upon the situation which interests it and stirs it up to think; it insists that it *shall* 'mean' one thing rather than another, and shall develop in one way rather than another.

It is not indifferent, therefore, to the alternative judgments it tries to formulate and to compare. They are not all of equal value in its eyes, but some are vastly preferable to others. Hence the mind is not unbiased or unprejudiced, and its thought-experiments are tried in a definite order, an order of attractiveness, while the more repellent or improbable ones are postponed *sine die.*

§11. Judgment the End of Deliberation.

Sooner or later, however, the time comes in every situation when thinking has to stop, and action, modified, enriched, and improved by thought, has to follow. How soon will depend on the time there is for deliberation, on the complexity of the influences affecting the mind, and in a general way on the urgency of action; but in the end we must 'make up our mind' and pass a 'judgment' on the situation.

This judgment is a *decision* which leads to action mediated and modified by the thought which has preceded. Of course, if the thinking should *not* modify the action to which the impulses prompted, it is merely a waste of time and worse than worthless. Usually, however, thinking does make a difference, and normally a difference for the better.

The judgment which terminates the period of questioning, doubt, and deliberation, moreover, always selects what seems to be the *best* among the alternatives that have presented themselves to the mind. This claim to value is always implied in a real judgment; for if the judgment adopted had not been thought to be the best some other judgment would have been preferred. In making what he thought was the best judgment under the circumstances its maker may, however, have been aware that it was not completely good and perfectly satisfactory; but this would not have deterred him; it would only make him readier to supplement, revise, and improve his first judgment. Indeed, he may make his judgment largely in the hope of advancing thereby to a better one; he need no more have been under the delusion that his judgment was final because he recognised the value of a provisional decision, than he need have imagined that he had arrived at certainty by making a judgment that by an official fiction puts an end to doubt. In all such cases the verbal form need be no indication of the psychological facts. A judgment formally terminates doubt; but its maker may yet continue to feel it, and may only be acting *as if* he were certain, and in order to *test* his doubts and in the hope of resolving them by action. A judgment claims to be the best *possible*; but it may be only the best *available*, and its maker may know this and be anxious to improve it. A judgment claims truth, but it may easily turn out to be false. Thus the appearance of deci-

siveness which the passing of a judgment implies is in a way deceptive; it tends to disguise the radically experimental function of real thinking. It should not, therefore, be so interpreted as to prevent the re-opening of any question which the progress of science may demand.

§12. Judgment a Personal Act.

On the other hand, there is no deception about the air of personal decision which envelops Judgment. Every judgment is a personal *act*, by which its maker commits himself and assumes a responsibility he cannot disavow. Just because no judgment issues from pure reason as a product of non-human thought, just because every judgment arises as a human response to a particular situation in which some one feels himself personally involved, just because it is stained through and through with the personality of its maker, we have a right to hold him responsible for his judgment. As he is so he judges, and as he judges so he is judged. The judgment is his act, which he chose in preference to alternatives (he was at the very least able to abstain and to 'suspend judgment'), and he must take the consequences of his act, just as the judgment must take the consequences of its truth-claim.

We must disallow, therefore, both the pretences with which intellectualist logic has so long hoodwinked us. It is not true (1) that when we have failed to make the judgment which the situation demanded we can relieve ourselves of the blame for our inadequacy or fatuity by fathering our judgment upon any impersonal, self-developing truth, and pleading that *per se* it was not false. If it was a false move and led astray a train of thought, it was a bad judgment. Nor, on the other hand, is it true (2) that knowledge grows in a wholly impersonal manner, and that the one contribution man can make to the process is the mistakes he makes out of his native stupidity. If, as can hardly be disputed openly, truth-seeking is the purely human undertaking he sees it to be, its conduct rests with him, and both its successes and its failures must be credited to man.

Being thus a responsible act, judgment is inevitably *risky*. All living and all doing involve risks, and in judging, also, we must acknowledge them and boldly take our risks. These begin the moment we stop to think. For after all it may be that we misjudged the situation, and should have done better to act promptly. After that we may make a variety of mistakes by selecting the wrong point as the 'essence' of the situation, and by thinking about it in the wrong terms, by including the irrelevant and by omitting the relevant in our calculations. We may next deliberate too long or judge too harshly. And, lastly, we may choose wrongly and adopt a judgment which turns out to be 'false'. But we have the consolation that if we had refused to

run the risk of error we should have missed the chance of attaining truth, and that an intelligent man's intelligent error may in the end be very helpful. On the whole, therefore, the doctrine of our responsibility for the judgments we make should be at one and the same time a stimulus, a warning, and an encouragement.

§13. The Effects of Judgment: (1) Improve the Action.

When at last a judgment has been launched upon the world, what of its effects? In the first place it must, of course, be *acted on*. For it has been shown that all thinking arises out of living and for the sake of action, and it follows that it must justify itself in action. If the relation of reflection to action is ignored, the former becomes unintelligible and frequently pernicious. So if the judgment which concludes deliberation were not acted on, the whole thinking process would be reduced to futility and it would become doubtful whether its maker had made it in good faith and really believed it. If it were acted on and did *not* improve the situation, it would be condemned as a mistake and would vanish. A successful judgment, therefore, that can maintain its truth-claim, must *improve* the situation from which it springs, and initiate *salutary* changes.

A simple illustration should elucidate the benefit of thoughtful action and the improvement effected by its control of impulse. Suppose a man walking through a dry country on a hot day. When he comes to some water he naturally feels impelled to drink, and if he were an unthinking creature he undoubtedly would drink. But if he is 'capable of reflection' he stops to think about his (particular) situation before he quenches his thirst. It may then occur to him that the water looks rather foul, and that there is a good spring a mile farther on. So he controls himself and 'acts reasonably' by refraining from drinking. If, however, he knew that there was no further water for the next ten miles it might be more reasonable to run the risks of drinking the dubious water rather than die of thirst. Both these cases would exemplify the biological value of thinking and the improved adaptation it enables us to make: the reflective act is clearly more closely adjusted to the actual circumstances of the particular situation (cp. §5) than the prompting of organic impulse, which merely establishes a general connexion between water and drinking without regard to the special circumstances of the case. The fact that they enable us to consider these is the real justification of 'reason', 'thinking', and 'judgment'.

§14. Judgment Transforms also (2) its Maker, (3) his Situation, and (4) his Terms.

The salutary changes which a *successful* judgment mediates extend, however, far beyond its maker's impulsive action at the time. A successful judgment will affect also its maker, the situation, and the terms by which it is apprehended. It will always effect more or less of a transformation in the mind that has succeeded in making a valuable judgment, in the reality that confronts the mind, and in the terms the mind has employed.

(1) The maker of the judgment not only *benefits* by his modified reaction to the situation he has thought about successfully, but also *learns* from it, and increases his stock of knowledge and his faith in the value of thinking.

(2) This new knowledge transforms the world in which he lives—i.e. as it appears to him—in a way which he could express by saying, 'So, then, reality was not as I imagined, but as I have just discovered'.

(3) The new knowledge is incorporated into the meaning of the terms in which it was expressed, and so transforms their meaning that they can henceforth convey the new discovery. For in a really new bit of knowledge (alike whether it is new to science or only to its maker) the terms *ex hypothesi* had never before been put together. Symbolically, the judgment *S is P* had not been made. Consequently it was not known that *this particular* S could have *this particular* P predicated of it. But now that the predication has proved a success, the newly established relation between S and P becomes part of the meaning of both terms. S becomes an S-of-which-P-can-be-predicated, while P becomes a P-predicable-of-S. Thus a really significant judgment always changes the meaning of the terms it uses.[5]

Under ordinary circumstances, of course, these changes are neither very great nor very noticeable, and this may explain, if not excuse, the fact that logicians have not only failed to notice them, but have actually accepted as the logical ideal rigid terms with fixed meanings incapable of expansion.[6] But a simple illustration will easily convince the reader that our abstract analysis is fully confirmed by familiar experiences. Strolling by the seashore in the company of a zoologist I espy a 'worm' wriggling in the sand and inquire what it is. "It is an Amphioxus." "What is that?" "The first vertebrate." Thus the former 'worm' is at once transformed into a biological celebrity, and henceforth regarded with interest, respect, and possibly affection! And simultaneously the meaning of 'vertebrate' is significantly enlarged and the formerly blank 'Amphioxus' is filled with meaning. If instead of acquiring all this new knowledge from a friend I had found it out myself, the process would, of course, have been more gradual and less dramatic, but its essential character would have remained the same.

§15. The Bearing on Logic of This Account of Judgment.

We see, then, that though in origin Judgment is only the final step in securing a better response to a vital predicament in which an intelligent and (potentially) reasoning creature finds itself involved, its logical significance far transcends the immediate need from which it springs. It becomes a vehicle for the growth of knowledge and the evolution of reality—that is, of the real we apprehend; and these logical functions tend to dwarf its primary use, at all events in the eyes of logicians.

In the first instance the immediate value of a judgment is easily determined. It is relative to its effect on the situation which engendered it, and bound up with its success in effecting a salutary change and a transformation desired. If it leads to the right response to the situation which evoked it, it is a *good* judgment, as good as a judgment need be, good for the purpose of its maker, and also 'true'—true because it works a salutary change.

But it has also a wider significance for logic. It humanises logic by puncturing the traditional pretence that it is an affair of pure reason apprehending impersonal truth with indisputable cogency. It reveals instead the experimental character of thought, the progressiveness of knowledge, and the plasticity and malleability of the real-as-known. It is, moreover, of the utmost importance that the student of logic should have these features impressed on him thus early. It will help him to grasp the natural continuity of Judgment and Inference, the gradual consolidation of proofs, the accumulation of probabilities, the growth of truths, the purposive manipulation of experience, and the futility of imagining that thought can avoid risks, achieve finality, and come to rest in absolute security. And, above all, it will serve as a steady source of light and enlightenment when we proceed with our archaeological explorations into the labyrinthine ruins of the Formal theories of Judgment.

NOTES

1. Except Perception, for the relations of which to Judgment, see Chap. XI, §10.
2. The eulogistic name for these two is 'a *priori* truths'.
3. Cp. Tantalus, p. 20 f.
4. Chap. IV, §3.
5. Cp. *Problems of Belief*, p. 106.
6. The whole of symbolic logic rests on this false assumption.

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SCIENTIFIC DISCOVERY AND LOGICAL PROOF

§1. Among the obstacles to scientific progress a high place must certainly be assigned to the analysis of scientific procedure which Logic has provided. This analysis has not only been inadequate in itself, but has set itself a mistaken aim. It has not tried to describe the methods by which the sciences have actually advanced, and to extract from their experience the logical rules which might be used to regulate scientific progress, but has treated scientific discoveries almost entirely as illustrations of a preconceived ideal of proof, and so has freely rearranged the actual procedure in accordance with its prejudices. For the order of discovery there has been substituted an order of 'proof', and this substitution has been justified by the assumption that if discovery had taken the ideally best course, it would have coincided with the process of proof. It followed, of course, that the same logic would do for both, and that this logic was already in existence.

The damage thus inflicted upon Science was twofold. Not only were the logicians given a plausible excuse for persisting in their profound misapprehension of scientific inquiry and rendered incapable of giving any help or guidance in the solution of actual problems, but, what was

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Studies in the History and Method of Science, ed. Charles Joseph Singer (Oxford: Clarendon Press, 1917), vol. 1, pp. 235–289.

much worse, the scientists themselves were misled about the nature of their operations.

The precise value of the service which a correct logical analysis of its procedure might have rendered to Science is perhaps open to dispute, though it must surely be beneficial to operate consciously, and with a full understanding of their nature, the methods which have been hit upon empirically; but even if logicians have commonly been too unfamiliar with the details of scientific problems to offer much practical advice, it would be difficult to overrate the mischiefs which must have resulted from referring scientists to an incorrect analysis of their actual procedures. For the attempt to justify by such a false ideal what they had actually done was bound to divert their attention from the methods that were actually effective and fruitful to others which were impracticable and sterile, to waste energy upon false aims and impossible ideals, and so to hamper scientists fatally in the exercise of their scientific rights and powers.

Hence it is not too much to say that the more deference men of science have paid to Logic, the worse it has been for the scientific value of their reasoning, while the less they have troubled to know about the theory of Science, the better it has been for their practice.

Fortunately for the world, however, the great men of science have usually been kept in salutary ignorance of the logical tradition and left to their own devices, by the accident that the historical organization of academic studies nearly everywhere confined 'logic' to the literary curriculum. Nevertheless, the moral of this situation is not that it is right for science to neglect logic and for logic to despise science, but that science should appeal from logic as it is to logic as it ought to be, and should insist on being provided with a *reformed* logic. For surely if a scientific education is to be more than a narrow and technical specialty, and is to exert a 'liberalizing' and broadening effect on the mind, it *ought* to include a study of scientific method in its generality and a certain understanding of the intellectual instruments by which all others are operated and constructed.

The whole evidence for these contentions it will not, of course, be possible to marshal within the limits of this essay, but the systematic criticism, to which the whole traditional logic has been subjected in my *Formal Logic*[1] may perhaps absolve me from the duty of substantiating them exhaustively. It may suffice to indicate the extent of the scientific grievance against 'logic' by drawing up a list of problems in the logic of science which the traditional logic has misconceived, and then to select for fuller treatment a palmary example of the radical discrepancy between the two.

The traditional logic may be convicted of having gravely misrepresented, (1) the value of classification and the formation of classes, scientific processes of which the real logic was only revealed by the Darwinian

theory, (2) the function of definition, (3) the importance of analogy, (4) of hypothesis and (5) of fictions, (6) the incomplete dependence of scientific results on the 'principles' by which they are (apparently) obtained, (7) the formation of scientific 'law' and its relation to its 'cases', (8) the nature of causal analysis. Other important features of scientific procedure cannot be said to have been recognized at all, e.g. (9) the problem of determining what is *relevant* to an inquiry and what practically must be, and safely may be, excluded, (10) the methods and justification of *selection*, (11) the essentially *experimental* nature of all thought and consequent inevitableness of *risk*, (12) the necessity of so conceiving 'truth' and 'error' that it is possible to *discriminate* between them, and (13) the need for an inquiry into *meaning* and into the conditions of its communication.

I

§2. The most instructive, however, of the discrepancies between 'logic' and scientific procedure will appear if we compare the logical notion of *proof* with the scientific process of *discovery*, and examine how far it can afford any means of regulating, stimulating, or even apprehending the latter. We shall find that the logical theory of 'proof' has no bearing on the scientific process of discovery, is not related to what the sciences call proof, and can only have a paralysing influence on any scientific activities which try to model themselves upon it. On the other hand, the study of the process of discovery will point to an important correction in the notion of logic.

§3. The scientific uselessness of the traditional logic should not, however, excite surprise. For what reason was there to expect that the theory of proof should turn out to be adequate, or even relevant, to scientific procedure? It had sprung from a totally different interest, proceeded on different assumptions, and aimed at different ends. It did not spring from interest in the exploration of nature, and did not aim at its prediction and control. Nor did it presuppose an incomplete system of knowledge which it was desired to extend and improve. It originated in a very special context, from the social need of regulating the practice of dialectical debate in the Greek schools, assemblies, and law-courts. It was necessary to draw up rules for determining which side had won, and which of the points that had been scored were good.

These were the aims Greek logic set itself, and successfully achieved. But the impress of this origin remains stamped all over it, and the accounts given of logical proof ever since have retained essential features of Greek dialectics.

Thus it was assumed that science could start from principles, as indis-

putable as are the current meanings of words in a dialectical debate, and the end of the whole theory of proof was always conceived as being to secure the conviction (ἔλεγχος) of one party to a dispute, who was to be definitely crushed by the triumphant cogency of a syllogistic demonstration, while the more real and fruitful analogy between scientific inquiry and debate, viz. that *there is always another side*, to which also it is well to listen, was unfortunately obscured by Aristotle's discovery of the syllogistic form and its show of conclusiveness. But for the purpose of apprehending scientific procedure the syllogism is a snare: by putting scientific reasoning into syllogisms, the difference between the true and the false views is made to appear qualitative and absolute, instead of being a quantitative question of more or less of scientific value. Thus dogmatism is fostered at the expense of progressiveness, and the mistake is committed of approaching the discovery of truth in a party spirit. Hence its dialectical origin has become *fons et origo malorum* for logic.

§4. It is true that this mistake is very old, and has grown deeply into the fabric of logic. For Aristotle had no sooner worked out the classic formulation of the rules of dialectical proof than he proceeded to extend their scope by applying them to the theory of science, in the *Posterior Analytics*. His instinct in so doing was sound enough; for there is no better verification of a theory than its capacity to bear extension to analogous cases. And of course if this extension had been successful, it would have supported the belief that the theory of discovery could profitably be amalgamated with that of proof.

Unfortunately, however, the verification only seemed to be successful. Aristotle chose to exemplify his theory of scientific proof from the mathematical sciences. His choice was natural enough, because they were the only sciences which had reached any considerable development in his day, and they had, moreover, an apparent necessity and universality and a fascinating appearance of exactness. But lie had unwittingly chosen the most difficult and deceptive exemplification of scientific procedure. Because the mathematical sciences were in a relatively advanced condition they seemed to lend themselves to his design. He could there find terms whose meaning, and principles whose truth, was no longer in dispute. They could in consequence be argued from with as much assurance as debaters could assume the recognized meanings of words. And the fact that results seemed to follow from mathematical definitions and premisses which were not merely verbal, shed a delusive glory on the forms of dialectical proof by which they had been reached. Hence it easily escaped notice that the logical superiority of mathematics was an achievement, not a datum. Just because the mathematical sciences were very ancient, their origins had been forgotten, and with them the tentative gropings which had first

selected, and. subsequently confirmed, their principles. They had become immediately certain and 'self-evident', and no one was disposed to dispute them. On this psychological fact the whole theory of logical proof was erected.

Again, it was natural to suppose that the true nature of scientific knowing must be revealed in its most perfect specimens: no one stopped to reflect that even so the real difficulties of making a science are more keenly felt and more easily seen in the nascent stage than in one which has victoriously overcome them, and has rewritten its history in the assurance of its prosperous issue.

Lastly, the subtle ambiguity which pervades all mathematical reasoning, according as its terms are taken as *pure* or as applied, was overlooked entirely—with the disastrous result that the universality, certainty, and exactness pertaining (hypothetically) to the ideal creations of 'pure' mathematics were erroneously transferred to their 'applied' counterparts. To this day logicians are found to argue that real space is homogeneous because it is convenient in Euclidean geometry to abstract from the multitudinous deformations to which bodies moving through it are subjected, and to leave them to be treated by physics;[2] nor are they aware of any lack of 'exactness' and discrimination when they identify the ideal triangle with the figures they draw on the blackboard.

§5. After its apparent success in analysing mathematical procedure there was no more disputing the supremacy of the theory of 'proof'. The facts that its field of application was soon found to be much narrower than that of science, and that it failed egregiously to apply to the procedures of the (openly) empirical sciences, and *a fortiori* could not justify them, if they were noticed at all, were held merely to show that these sciences stood on a low level of thought, which from the loftier standpoint of logic could be contemplated only with contempt; if they required help and got none, so much the worse for them. Accordingly the whole theory of science was so interpreted, and the whole of logic was so constructed, as to lead up to the ideal of demonstrative science, which in its turn rested on a false analogy which assimilated it to the dialectics of 'proof'. Does not this mistake go far to account for the neglect of experience and the unprogressiveness of science for nearly 2,000 years after Aristotle ?

§6. Yet the deplorable consequences of this error should not render us unjust. The influence of Aristotelian logic on the theory of science was natural, and in a sense deserved. For Aristotelian logic is perhaps the mightiest discovery any man has achieved single-handed. Its might is sufficiently attested by the length of its reign. Euclidean geometry alone is comparable with it, and Euclid owed far more to his predecessors than Aristotle. More over, the Aristotelian logic may be said to have achieved its purpose. It was

able to regulate dialectical discussion. The syllogism did determine whether a disputant had proved his case, and for any one who had accepted its assumptions its decision was final, while even its severest critics had to admit that it was an indisputable fact, the interpretation of which was a real problem.

Unfortunately, there is not yet any agreement among logicians about the solution of this problem. Aristotle's own analysis did not go back far enough: he stopped short at the *Dictum de Omni* and the reduction of syllogisms in the second and third figures to the first. He did not penetrate to the ultimate assumptions which were implied in the dialectical purpose and social function of the syllogism. But the truth is that syllogistic reasoning presupposes quite a number of conventions which Aristotle did not state, and which can hardly be said to have been adequately recognized since.

§7. (1) The first of these may be called the *Fixity of Terms*. Syllogistic reasoning manifestly depends on the assumption that the terms occurring in it have meanings sufficiently stable to stand transplantation from one context to another; for only so can they establish connexions between one context and another. Thus a syllogism in *Barbara* argues that because *all M is P* and *all S is M*, *all S must be P*. But it can do this 'validly' only if *M*, its middle term, remains immutably itself, and is the same in both premisses. Doubt, dispute, or confute this assumption, and the cogency of the syllogism as a form of 'proof' is overthrown at once. If the sense in which *M is P* is not the same as that in which *S is M*, the syllogism breaks in two, and its conclusion becomes precarious. Raise the question of how far reality conforms to this assumption, and you get at once a subtle problem of the applicability of the syllogistic form to the case in hand, which is precisely analogous to the question whether a theorem of pure mathematics is applicable to the behaviour of a real thing. In either case the cogency of the 'proof' which establishes the conclusion is impaired and ceases to be unconditional. The conclusion of a 'valid' syllogism will only follow *if* the middle term can be known to be unambiguous, and if the objects designated by the terms do not change rapidly enough to defeat the inference. And that this is the case can usually be ascertained only by actual experience. The conclusion, therefore, cannot be simply deduced; it has actually to *come true*, before we can be sure that the reasoning *was* sound. Absolutely a priori proof thus becomes impossible, if the assumption of the fixity of terms is contested: all proof becomes, in a sense, empirical.

Nevertheless, experience shows that the fixity of terms, though not a 'fact', is a *valid 'fiction'*: in ordinary discussion the terms may usually be taken as fixed enough to render valid syllogisms common. An ordinary debate proceeds upon the assumption that the meaning of the terms

involved is fixed, and cannot be varied arbitrarily. To science, however, this assumption does not apply without restriction. In a progressive science the meaning of terms often develops so rapidly that such verbal reasoning does *not* suffice. Hence the mere occurrence of verbal contradictions in a scientific reasoning is no proof that the argument is unsound. It may show merely that its terms are *growing*.

It should be observed further that this same assumption is implied in the fundamental 'laws of thought' on which the traditional logic rests. Indeed, the notorious 'Law of Identity' seems to be merely another statement of it. It is usually formulated as '*A is A*' but in its actual logical use it is really the assumption that 'everything *is* what it is called'. It is, of course, anything but self-evident that '*A*' *is A*, but *unless* the *S*, *M*, and *P* of the syllogism are *rightly* so called, the syllogism will not hold. Similarly, the Law of Contradiction collapses at once if the terms to which it is applied are allowed to change. The inability of '*A*' both to be *B* and not to be *B* vanishes if '*A*' is not fixed and may change its habits. And of course the real things known to science all change, and are fixed only by a fiction. Hence every application of the logical convention to real things may be challenged: it involves a fiction and takes a risk, and both of these may be bad. But the traditional logic ignores both the risk and the fiction and the lack of cogency in its attitude.

§8. (2) It is a further presupposition of the syllogism that the meaning of its terms is *known*. When a discussion is begun the parties to it are supposed to understand each other, and not to have first to find out and form the meaning of the terms they use. This assumption also is roughly true in ordinary debate, and its convenience is manifest. If things are rightly named, and if this feat has been accomplished once for all—presumably by Adam and Eve before they were turned out of Paradise for trying to know too much—we shall escape many of the most trying difficulties of scientific inquiry. We need no longer trouble whether the best names have been given, and whether a name good for one purpose is equally good for another, nor need we inquire whether our names may not unite what is alien on account of a superficial likeness, or separate what is akin on account of a superficial difference.

In science, on the other hand, the assumption that we know what meanings our terms can convey is not made as a matter of course. We may begin with roughly labelling objects of interest, and then inquiries may be conducted into, e.g., 'electricity', 'elements', 'life', 'species', &c., in the hope of settling what these terms *shall* mean, and of finding out *more* about their meaning, and without making the assumption that whatever new facts are discovered about them must conform to our preconceptions and confirm our nomenclature. Thus to a man of science it will not be cogent to argue

that because an 'element' is (by definition) an ultimate form of matter which cannot be broken up, and 'radium' breaks up, 'radium' is not an 'element', or that because 'species' are eternal forms, and the Darwinian theory claims that they are not immutable, it can be dismissed as involving the 'contradiction' that a 'species' is not a species. Thus the best syllogisms lose their cogency so soon as a question is raised whether the verbal identity of their terms is an adequate guarantee of the real identity of the things they are applied to.

§9. (3) It is a further presupposition of the logician's conception of 'proof' that absolute truths exist, and that in the ideal demonstration they form the premisses from which the conclusion follows. This presupposition is not stated, and is not implied in the form of the syllogism. For a syllogism is no less 'valid' if its premisses are true only hypothetically, and not absolutely. Indeed, it is not thought to impair the 'validity' of a syllogism that its premisses should be utterly false. At any rate we can *reason* quite as well with hypotheses and probabilities as with absolute truths, and this is in fact what we usually do, whether or not we are aware that our premisses are conditional and hypothetical. This ordinary practice, however, is resented by the traditional logic. For if our premisses are only hypothetically true, how can they lead to conclusions which can be declared absolutely true? And if our conclusions are not absolutely true, how can they be certain? Are they not bound to remain infected with the doubts which beset their premisses?[3] As we value the certainty of our conclusions, therefore, absolutely true and certain premisses must be procured. If they cannot be procured, even the best formal proofs will remain hypothetical, and all truth will become dependent on experience. For if nothing is true absolutely, and every truth has originated humbly in a guess that has grown into a successful hypothesis, it can always be suggested that after all it may benefit by a little mere verification. It may be true enough psychologically and for practical purposes, but it does not realize the ideal of 'logical certainty'.

§10. This ideal Logic has formulated from the first. Aristotle already was not content with merely analysing the form of reasoning; he aspired to formulate the norm of scientific demonstration. The 'demonstrative syllogism', which he held to be the form of truly scientific reasoning, differs from the formal syllogism in two essential respects. Its premisses are absolutely true, and its middle term states the real 'cause', which connects its terms and is not merely a *ratio cognoscendi*. The reasoning proceeds, therefore, from premisses which are unambiguous, true, and certain, i.e. *necessarily* true and *absolutely* certain. Nor does the conclusion lose any of this excellence. Logic puts on a fine air of modesty, and merely claims that the syllogistic form is a guarantee that no truth can be *lost* on the way from

the premisses to the conclusion in a 'valid' argument. If, therefore, our thought is properly arranged, our conclusion will be as true and certain as were its premisses, and no man will be able to gainsay it. It is the great beauty and merit of the syllogistic form that it is an arrangement which gives us this guarantee.

It was natural, therefore, that throughout the history of logic enormous importance should be attached to the acquisition of unquestionable starting-points. For the possession of 'valid forms' was not enough. It only insured against loss of truth, it did not provide for its acquisition. It seemed, however, to imply that truth could only be generated out of truth, and handed down from the premisses to the conclusion. Hence the insistent demand for assured starting-points, self-evident 'principles' which the infallible method of syllogistic deduction might conduct to equally certain conclusions.

In reality, however, this demand for certainty was extra-logical: it is not required for the purpose of analysing reasoning. For it is just as easy to reason from doubtful and probable premisses as from certainties, nor need the doubt in the reasoner's mind affect the form of the reasoning. If, however, there is an imperative desire for certainty, it must be somehow gratified by logic. And there seemed to be no way of doing so except by ascribing absolute truth and certainty to the initial principles of science.

Of course it was covertly assumed that certainty could only be reached by *starting* from certainty, and that no possibility of a growth of assurance in the progress of the reasoning could be entertained. In a sense this assumption was correct (cf. §§27, 28), because it is true that the gradual verification of scientific truths does not render them absolute; but it led to neglect of all methods which appeared to start with premisses initially doubtful and hardening into certainties by gradual confirmation. No doubt it was not strictly impossible to reason from premisses not known to be true, but such reasoning was despised as 'dialectical', and no inquiry was made into the frequency of its occurrence in actual science. Why, then, waste time upon so unworthy a procedure, instead of fixing one's whole attention upon the truly logical ideal, the absolute proof of absolute truth? Let us maintain, rather, the old Aristotelian[4] conviction that the truly scientific syllogism proceeds from premisses that are true and underivative (because 'self-evident') and inerrant, and demonstrates its conclusion with ineluctable necessity! Thus the attainment of *absolute truth* was unobtrusively smuggled in as the aim of reasoning, and became an integral feature of the ideal of 'demonstration'.

§11. From the standpoint of the scientific inquirer, however, this whole theory of proof is open to the gravest objections. He finds first that it is impracticable, being composed throughout of counsels of perfection with

which he cannot comply, and then that, even if he could, they would be perfectly useless, and destructive of his aims.

(1) It strikes him at once that the Fixity of Terms is an obvious *fiction*. He will of course be aware, from his scientific experience, that fictions have their uses and are often indispensable; but he will know also that not all fictions are useful, and that the adoption of a fiction has in each case to be justified by its usefulness. Moreover, it is not so much its immediate and prospective use which justifies it, though this yields the usual motive for its adoption, as the ulterior uses ascertained *ex post facto* by experience.

He will ask, therefore, for evidence that an *absolute* fixity of terms is the vital necessity for logic it is declared to be. He will admit, of course, the familiar arguments for a certain *stability* of meanings which have come down from the days of Plato, but he will suggest that a *relative* fixity of terms is quite sufficient to content them. He will point out that in a progressive science any absolute fixity in its terms is precluded by the very progress of the science. For the terms in use must somehow manage to convey the *growing* knowledge they are employed to 'fix'. The term 'gas', for example, must not be tied down to the meaning Van Helmont desired to convey when he invented it; it must incorporate all that physics has discovered about 'gases' ever since. Similarly, when Darwinism transforms the notion of 'species', and the discovery of radio-activity that of 'atom', these developments of meaning must be recognized as perfectly proper. To object to these conceptions as modern science uses them, on the ground that, because to Plato and Aristotle species were eternal and immutable, a 'species' that changes cannot be truly a species, or that because an 'atom' is etymologically 'indivisible', it becomes an impossible self-contradiction when it is made up out of 'electrons', will seem to him to reveal only the fatuous pedantry of an utterly unscientific mind.

§12. (2) If he is acquainted with psychology, he will perceive also that the fiction of the fixity of terms is subject to a further restriction. It is not only in science as such—for all sciences must be conceived as progressive—that the fixity of terms cannot be made absolute: a real fixity is strictly inconceivable for and in every human mind. For every term that is actually used to convey a meaning must be held to form part of a *new* truth,[5] i.e. of a truth that was not previously in being. It is not a question of principle whether the truth is supposed to be new only to the person to whom it is addressed, or claims to be new to all, i.e. to science. For no judgment would be made unless it had something new to say.[6] Hence *every real judgment* as opposed to the verbal formulas which are called judgments in the logic-books, *more or less modifies the meaning of its terms*. If it succeeds in being a real judgment and a new truth, it establishes a new and previously unknown relation between its subject and its predicate. 'S', is henceforth an

S-which-can-have-*P*-predicated-of-it, and '*P*' a *P*-which-can-be-predicated-of-*S*. Thus both the psychological associations and the logical associates of *S* and *P* are changed. That logicians should not have noticed so obvious a fact can be attributed only to their inveterate habit of not using in their illustrations real judgments intended to cope with actual problems, but operating with their verbal skeletons, which are not being used by any one to convey his meaning, and so do not have any *actual* meaning.

Clearly, then, no science can interpret the fixity of terms quite literally. Or rather, it can only interpret it literally—as a matter of the literal integrity of the *words* that *may* convey a meaning. But in a scientific inquiry the convention of formal logic must be reversed; the fixity of terms must be *understood* not to be absolute, but to be merely *ad hoc* and sufficient to convey a definite meaning, which it is desired to develop. Accordingly it must always be assumed that the results of an inquiry are to modify its terms, and that it is permissible, and indeed inevitable, to develop their meaning, so long as they remain capable of expressing and conveying the new truth. We must come to every inquiry with a willingness to learn and to expand our terms. The Fixity of Terms, as it is tacitly presupposed in the traditional logic, is a scientific blunder of the gravest kind.

§13. (3) To renounce it, however, entails further consequences. It appears to undermine the whole notion of *formal validity*. For if we admit in principle that the meaning of terms depends vitally on that of the judgment in which they occur, how can we continue to rely absolutely on the mere verbal identity of its terms to hold together a syllogism? In any syllogism the middle term, *M*, may have one shade of meaning in relation to *P*, another in relation to *S*. It may be quite right to call *M P* in one connexion, and to call *S M* in another; and yet, when the two assertions are put together, they may lead to a conclusion which is an error or an absurdity. The man who (in his laboratory) would rightly declare that 'all salt is soluble in water' and (at his dinner table) as properly hold that 'all Cerebos is salt', could not combine these assertions to draw the conclusion that 'all Cerebos is soluble in water', without finding that the facts confuted his anticipation.

No doubt, when this had happened, he might explain it, *ex post facto* (if he knew logic), by alleging a hidden 'ambiguity of the middle term'. We need not here discuss whether it is fair to treat as an inherent ambiguity what is really a juxtaposition of shades of meaning which were relative to different purposes and right in their original contexts, thus manufacturing a fallacy by selecting the premisses: the important thing is that the logician should be driven to admit that *any* middle term may become ambiguous in this way when a syllogism is constructed, and that this completely stultifies his assumption that the *verbal* identity of the middle guarantees the

real identity of the objects to which it refers.[7] If we call two things, which are and must be different if they are to be two, both '*M*', we necessarily take the risk that the differences are irrelevant for the purpose of our argument. We may legitimately assume this, but if we do, our hypothesis has to be confirmed in fact; it is naïve to think that the verbal identity of the terms is quite enough. If, then, actual identity cannot be absolutely guaranteed, if there is *always* a possibility that the same term when put into a syllogism and used in reasoning may develop an ambiguity and become effectively two, it is evident that no amount of formal validity will safeguard the truth of a conclusion, even when the premisses are in themselves severally true. The syllogistic form is convicted of *losing* truth which it started from, and this is the very thing it boasted it could never do. Moreover, its coercive 'cogency' is exploded: whoever wishes to deny a 'valid' conclusion after admitting its premisses, has merely to suggest that by putting the premisses together a fatal ambiguity has been generated in the middle term.

§14. (4) The assumption that everything has been named rightly, and is what it is called, will scarcely commend itself to the scientific researcher. He will know from much painful experience that language only embodies the knowledge which has been acquired up to date, and too often is only a compendium of popular errors. Hence in any research which really breaks new ground the existing terminology will always prove inadequate, and new technical terms have usually to be devised in order to embody the new knowledge. The reason is obvious. *Ex hypothesi* we are inquiring *farther* into the subject, because our knowledge is felt to be insufficient. Accordingly the probable defects of the terminology we are initially forced to use must be borne in mind: we may expect it to omit what is unknown, to misdescribe and to classify wrongly what is partially known, putting together what does not belong together and separating what does, emphasizing the unimportant and slurring over the important, and generally failing to provide the mind with words that give it a real apprehension of the objects under inquiry. Hence the tacit assumption of Aristotelian logic that the terms reasoned with are fully known, that adequate notions are already extant, that truth has merely to be *disentangled* by a verbal criticism of existing opinions, and has not to be discovered outright, is false; nor can any argument from a verbal identity be taken as final.

§15. (5) But of all the assumptions lurking in the theory of proof, the belief that reasoning can and should start from certainty will seem the falsest and most pernicious to the man of science. For it means that we are committed to a search for absolutely certain premisses as a preliminary to every inquiry, and proscribes consciously hypothetical, i.e. truly experimental, reasoning altogether, or at least condemns it as incapable of leading to certainty. This search, however, will either be perfunctory and

uncritical, if it accepts false claims to certainty; or else vain, if it is conscientious. For every attempt to prove a conclusion absolutely demands *two* absolutely true premisses; hence the more we try to prove, the more we have to prove, and our search grows the more endless and futile, the longer it is continued. An immutable basis of absolutely certain truths, therefore, for reasoning to start from, is nowhere to be found. In no science is it possible to *start* with truths that are absolutely certain. In every science the initial 'facts' are doubtful; they are alleged, but not yet approved. They embody only unsystematic observation and prescientific experience of the subject, and so are probably the products of inaccurate observation, bad interpretation, false pre- conceptions, and popular superstitions. To acquire any considerable scientific value, such material has to be thoroughly revised and refined.

The validity of methods and the certainty of 'principles' are no more assured than the 'facts', initially. Every science has to work out its own appropriate methods experimentally; even if it borrows methods from another, it has to find out how and how far they apply to a new subject. Neither does a science acquire its principles by divine revelation; even if they fell from heaven ready-made, it would insist on testing the authenticity of the revelation. But philosophers have been extremely reluctant to admit that the certainty of principles is a gradual growth: for over 2,000 years they have been endeavouring to discover some way of securing an infallibility to principles which would render them independent of the working of the sciences which use them. But if their labours have proved anything, it is that no such way can be found.

(*a*) They have recognized many principles as '*self-evident*', and equipped the mind with a variety of 'faculties', expressly invented to enable it to apprehend the 'self-evident' inerrantly. But they have not been able to agree upon a list of self-evident principles,[8] nor even to find any truth whose claims to self-evidence have not been denied by competent critics. Nor have they been able to define their notion of 'self-evidence' itself; they cannot discriminate between the sound 'logical' self-evidence, which they conceived to guarantee truth, and its merely 'psychological' 'mimic', which is certainly much commoner, and becomes more intense and extensive the more unsound is the mind that 'apprehends' it.[9] Hence an unprejudiced observer has no reason to put the 'intuitions' of philosophers and the 'faculties' which apprehend them on a higher cognitive level than those of women or even lunatics. They all impose themselves psychologically; but this proves nothing as to their logical value, and science has to test them just the same.

(*b*) The principles which are said to be *necessary* or *logical 'presuppositions'* all turn out to be hypothetical when they are examined. They are

needed, no doubt, to solve the problem in hand, *if* the particular way it is formulated is taken for granted. But if either the order or the formulation of problems is altered, they cease to be either 'necessary' or 'presuppositions'. For example, the 'axiom of parallels', *alias* 'Euclid's postulate', is a necessary presupposition of geometry, if the existence of parallels is assumed. But if we prefer it, we can just as well (with Aristotle) make it our axiomatic 'presupposition' that the interior angles of a triangle are equal to two right angles, and can then deduce the existence of parallels. I.e. Euclid might have deduced what he assumed, and assumed what he deduced. If, moreover, we do not desire to construct a Euclidean geometry at all, we can deny *both* presuppositions, and proceed from *alternative* postulates, which lead to the various metageometries. The only things, in short, which all scientific principles presuppose are the desire to construct a science, and the desire to construct it in a particular way, which is simplest, or easiest, or most systematic, or most in accordance with the reigning prejudices. But these desires are the very things which the logician's account of principles always omits to mention.

Again, the whole of Kant's scheme of a priori presuppositions in the theory of knowledge rests upon an arbitrary assumption, viz. that mental data are to be conceived as originally discrete and are therefore in need of 'synthesis'. But it is just as possible to conceive an analysis of knowledge which starts from the 'presupposition' of a continuum or flux, and proceeds to trace out the principles by means of which this continuum is broken up into a world of apparently distinct things and processes. Nor is it possible to say in advance of experience which of such 'presuppositions' is going to be more convenient and more conducive to scientific progress.

(*c*) It demands a high and rare degree of philosophic insight to perceive that very many principles are neither certain, necessary, nor probable, but simply *methodological*. Whether we think them true or not, we adopt them because of their eminent convenience. If they turn out to be false, candour compels us to call them *methodological fictions*; but they continue in use. Our belief in the trustworthiness of memory is a good example. For though we often find that our memory has played us tricks, we continue to accept as true what we 'distinctly remember'. If no limitations to the truth-claim of such assumptions are discovered, enthusiasts will probably insist on promoting them to the rank of indisputable 'axioms', and hail them as absolute truths. But their scientific value is not thereby enhanced, and the cautious will eschew such exaggerations. For there is no real reason why the scientific rank of principles should not rest openly and entirely on their actual services, and why a 'methodological assumption' should not rank higher than a 'self-evident truth'. For the latter is at most a fact of our mental organization which nothing has so far turned up in nature to set at

naught, and as such a fact it is itself a thing to marvel at rather than an explanation of other things. The scientific spirit will always hesitate to acquiesce in the limits which are set to inquiry by sheer brute facts, and if the absolute truth of certain principles were merely an ultimate fact which could neither be impugned nor explained, this would go far to make these principles appear unintelligible and would be a constant challenge to dispense with them, or somehow to evade them. A principle, then, should always be prepared to state the reasons a science bad for adopting it: only the reasons will appear from the actual working of the science. They will involve a reference *forward* to the facts it copes with, not *back* to higher principles or to any claim that proves itself by its self-assertion.

(*d*) Indisputable principles, then, are not consonant with the spirit of inquiry: it will gladly let them go, if it can attain truth and advance knowledge in other ways. It will not shrink even from repudiating the ideal of absolutely true and demonstrated truth, if it can be realized only by sacrificing the progressiveness of science; nor will it be dismayed to find that this ideal is unrealizable. For when the inquirer reflects upon his own procedure, he finds that it points to a radically different ideal, and that the existence of absolute truths would only be a hindrance and a restriction upon his endeavour (cf. §28 (4)).

II

§16. Before, however, we attempt to delineate the logical ideal of the discoverer, it will be necessary to encounter a serious objection which protests on principle against such an undertaking, and urges that discovery by its very nature must elude logical treatment. It is contended, in the supposed interests of logic, that discovery is a process so inherently and incurably psychological that no logical account can ever be given of it. Discoveries are windfalls, and come as 'happy thoughts' to the gifted geniuses that make them, in a manner neither they nor any one else can account for or describe: they are therefore logically fortuitous, and to set forth the ideal of proof by which the truth of discoveries is tested is all that need, or can, be the concern of logic.

Certainly the great majority of deductive logicians have taken up some such attitude towards the process of discovery. Aristotle contents himself with a bare mention of 'sagacity' (*ἀγχίνοια*) which is defined, as the instantaneous apprehension of the suitable middle term for constructing a demonstrative syllogism.[10] When one recollects the weary centuries of painful effort and continual failure which elapsed while the *élite* of the human race were seeking for clues to, e.g., the mysteries of disease and of

physical happenings, before they hit upon the notions of microbes and the mechanical theory, this naïve underestimate of the most difficult and essential of scientific procedures sounds like a mockery. Yet the whole Aristotelian school pass over the problem as lightly. They all seem to believe that while it is merely low cunning to make a discovery, it is a real proof of mental capacity to arrange it 'in logical order' after it has been made, and to show how far short it falls of the logical ideal. Even the inductive logicians may be said to have participated in this attitude. For they were not more anxious to propound methods of discovery than to contend that their conclusions were just as rigidly proved and just as formally valid as those of syllogisms. They did not see that they were thereby accepting the demonstrative ideal of proof and giving away their own; what they should have shown was that this ideal was utterly nugatory, and that their own methods could never conduct to 'proof', but only to something vastly superior.

§17. In spite, however, of this wonderful consensus of logicians the above argument depends essentially on a confusion. It has confused two things which are perfectly distinct, the actual procedure of the individual discoverer, and the generalized description of the attitude of mind and procedures of discoverers, as they appear to subsequent logical reflection. Both present problems to the logician, but the problems are not the same. To anticipate the process of actual discovery may well be left to the prophets; it will transcend the powers of logic and indeed of any science, unless it be individual psychology, if it exists, or history, if it be a science.[11] It may readily be admitted that anecdotes about the bath which fomented in the mind of Archimedes the idea of specific gravity, and the streets of Syracuse through which he ran and cried '*Heureka!*', or about the apple-tree which shed its fruit upon Newton's receptive head, and stimulated his brain to frame the law of universal gravitation, are beneath the dignity of science. Their narration belongs to history, which can go as deeply into their details as the scale of the history and the purpose of the historian demand; but the particular circumstances of a particular discovery may well be treated as 'accidental', and be smoothed out of the scientific record. But why does it follow that no common features can be traced in these histories of discovery, and that there cannot be compiled out of a sufficient number of them a generalized account of what appears to be the 'essential', i.e. really relevant, procedure of discoverers, which may serve as a guide and model to subsequent discoverers? Why should this be more difficult than to describe the method of lion-hunting from the records of lion hunts, or the treatment of a disease from the history of a number of cases? Indeed, it would seem that the thing has been done. Any discoverer may reflect upon his own discoveries, and, like Poincaré,[12] formulate the method he has found successful. And if discoverers are not all perfectly unique in their

methods, important uniformities will probably be found by comparing the methods of a number of discoverers.

Why again should it be assumed that the general account thus extracted from a retrospective study of discoveries must at once coincide with the logical 'ideal of proof'? Why should it even point to this, or be related to it otherwise than by contrast? Surely the possibility should be discussed that there are *two* procedures for logic to consider, of which the one describes how human knowers, starting from what they believe themselves to know, set about it to fortify and extend their knowledge, while the other moves on a superhuman plane and describes, with Platonic fervour, how ideal demonstration, descending from absolutely certain principles, moulds into a closed and inexpugnable system all the truths which are deducible from these and alone intelligible. The two accounts must be distinct, for they have different starting-points and work upon different material. Nor need they ever have any point of contact. For it may well be that human knowing never attains to an absolute certainty and a completed system, while deductive proof never condescends to notice mundane fact.

This was certainly so in the first rapturous vision of a priori 'proof' which solaced Plato amid the elusiveness and opacity of the flow of happenings. The deduction of the intelligible order of the ideal 'Forms' from their supreme ground and (*sole!*) premiss in the 'Idea of the Good' stopped short of facts and events at the *laws* of minimum generality,[13] and recognized in all the happenings of the sensible world an ineradicable taint of 'not-being' which rendered their stability impossible and their prediction vain. Aristotle similarly distinguished between the procedure which started from the *notiora nobis*, the apparent facts of perception, and that which began with the *notiora naturae*, the self-evident principles which could form the ultimate premisses of demonstrations. But that these two methods must somehow coincide was assumed rather than proved, in a way that should have discredited the doctrine. For Aristotle also was not able to explain how 'science', being of 'universals', could apply to particulars, which nevertheless he would not with Plato stigmatize as 'unreal', while the ascent from the sensible fact to the 'universal', which was called the 'induction' of the 'principle', is hardly validated by the naïve allegation of a mental faculty of 'intuitive reason' (*νοῦς*) endowed with the special function of apprehending principles in their particular exemplifications. It is high time, therefore, that this whole assumption that a necessary congruity exists between the logic of discovery and of proof should be subjected to a thorough examination.

III

§18. Such an examination will speedily establish that the mental attitude of the discoverer is, and must be, quite different from that of the prover.

In the first place, the discoverer is not in possession of the knowledge he covets. It is for him a desire, an aspiration, an aim to be attained. Proof, on the other hand, presupposes knowledge. Not only must the demonstrator *know* the assured truths he uses as premisses, not only must he have a supply of absolutely certain truths if his proof is not to remain hypothetical (§9), but he must already *know* the conclusion he exhibits. He cannot be ignorant, like the discoverer, of the result he is to arrive at. He is not engaged in *discovering* new truth, he is only showing how it *follows from* old truths. His retrospective contemplation has merely to retrace the history of its attainment, or rather to rearrange it in the more pleasing order which he calls 'logical'. This order is not that in which it *was* discovered, nor even that in which it *could be* discovered. For there are such things as necessary errors, indispensable artifices, and indefensible fictions, and the way to a truth often lies through them. Thus from time immemorial mathematicians have represented the continuous by the discrete, quantities by numbers, knowing full well what fictions their practice involved. Again, mathematical calculation of shapes, areas, and motions necessarily presupposes the fictions that bodies have the ideal and regular forms to which they 'approximate', and that their 'mass' is concentrated at their (ideal) 'centre of gravity'. It is more than doubtful whether the notion of an 'evolution' of species could ever have been reached, except by starting from the false notion of the fixity of species, or whether the true nature of the mobility and development of meanings could have been understood except by correcting the Platonic theory of immutable and eternal 'universals'. To 'proof' all these incidents and accidents of the history of discovery are irrelevant; all that has to be done is to show that the new truth can be deduced from the old, and that a 'logical connexion' exists between them.

§19. Not only is this much easier to do than to make the discovery, but it is very much easier to follow. Any one can see the connexion the data have been arranged in logical order. Hence the assumption that this order somehow represents the actual process in a perfected form is natural enough. But it leads to contempt for the procedure of discovery. The discovery is made to look so easy that it becomes impossible to appreciate its difficulty and its merit, and it seems astonishing that no one made it long before. For did not the 'facts' all but force it upon the dullest mind? Who could have failed to see that fossils must be (at least) as old as the rocks in which they are embedded, that obviously worked flints, similarly, attest the antiquity of man, that northern Europe is scratched all over with the marks

of a gigantic glaciation? It is forgotten that these 'facts' were *not* there until there came a mind prepared to notice them. Hence none of these discoveries were in fact easy to make, and they were preceded by a long struggle of the human mind with false preconceptions and the illusory 'facts' which they had engendered.

Nor are discoveries easy to get recognized when they have been made. The persecutions to which discoverers of new truth are subjected always and everywhere (more or less) form as discreditable a chapter of human history as the persecution of moral reformers. Those may count themselves fortunate who are simply ignored. Hence everything has to be 'discovered' over and over again. Nothing new ever enters the world, just as nothing old ever passes away, without infinite pains and after a protracted struggle. One curious result of this inertia which deserves to rank among the great fundamental 'laws' of nature, is that when a discovery has finally won tardy recognition, it is usually found to have been anticipated, often with cogent reasons and in great detail. Darwinism, e.g., may be traced back through the ages to Heraclitus and Anaximander. Thus it is true that there is 'nothing new under the sun'; but only because when a new truth first appears it does not prevail: when after a hundred repetitions it is at length recognized, it is no longer strictly *new*. Accordingly, the 'discovery' of a truth is only the beginning of its career, the first step by which it makes its way in the world, and still very distant from the crowning 'proof' with which logic complacently adorns it *ex post facto*, when it has 'arrived'. The slowness and difficulty, then, with which the human race makes discoveries, and its blindness to the most obvious facts, if it happens to be unprepared or unwilling to see them, should suffice to show that there is something gravely wrong about the logician's account of discovery.

§20. Quite apart from the difficulties which the psychological constitution and social organization of man put in the way of innovators, the making of a new truth which formulates a new 'fact' is also intrinsically anxious work. It is not merely that its maker can have no assurance that his enterprise will succeed, that he cannot start with a feeling of certainty from established truths, and be wafted by an irresistible wave of logical necessity to the safe haven of a predestined conclusion. He *must* start with a consciousness of ignorance and an all-pervading feeling of doubt about every step of his inquiry. This doubt he should not, more over, endeavour to disregard or to suppress; for it is the best guarantee that no way to the truth will be passed by in his explorations. Doubt, therefore, should he recognized on principle, and equipped with a technique of testing and experimentation: the inquirer should be proud that he has to feel his way in fear and trembling to the very end.

Yet his condition will not contravene Aristotle's dictum that all

inquiry and research proceed from knowledge previously acquired.[14] In a sense he will still start from what he knows, or thinks he knows. For it is psychologically impossible to do any thing else. The knowledge he believes himself to have cannot but affect all his ideas, and he cannot get away from it. His boldest speculations, his most hazardous hypotheses, will have *some* relation, however subtle and recondite, to the knowledge at his disposal. It will influence all his thoughts and guide his guesses. As he cannot divest himself of his knowledge and the ideas it has rendered familiar to him, he has to accept its limitations. His only problem is to use it as effectively as possible.

But it is clear that he cannot regard his knowledge with the same sort and amount of confidence as the believer in demonstrative proof. He must conceive himself as an explorer, and his attitude must be tentative throughout. Knowing that his premisses are questionable and only doubtfully true, he will recognize that his inferences are only probable, and stand in need of confirmation. As a rule he can, no doubt, find accepted truths to argue from; but these being relative to the existing state of knowledge are known to be subject to correction. Even where he has started with premisses of the most superior kind, which are generally deemed absolutely self-evident and certain in them selves, he will still be conscious of a doubt whether they will prove to be the right premisses *for his purpose*. If they are not, their truth is irrelevant and will lead him astray. In no case, therefore, can he escape the responsibility of *choosing the right ones* from his limited stock of known truths and familiar ideas, as he contemplates the infinite expanse of possible discovery. In whatever direction he moves, the unknown lies before him; he may come upon surprises or be stopped by unsuspected obstacles. In short, there is nothing of the irresistible about his progress; it has not the faintest resemblance to the majestic march from inevitable premisses to a predestined conclusion which so fascinates us in the theory of proof.

§21. But, it may be said, all this is not enough. The differences in the attitudes assumed by the reasoner in discovery and in proof may be only psychological. They do not prove any real logical difference between them; the logician's account may still be what the discoverer would acknowledge to have been his best course, if he could have seen it. It has, therefore, to be shown that the differences in question arise out of, and develop into, differences which are indisputably logical.

Thus, the ignorance which the inquirer feels is doubtless a psychological fact, but the lack of knowledge which engenders it is surely a logical fact of some importance. In general, the feelings of doubt, expectancy, and perplexity which beset the mind of the inquirer, and contrast so distinctly with the feelings of confidence, knowledge, certainty, and necessity which

accompany a 'proof', originate in a logical fact. Every inquiry starts from a *problem*, of which the solution is not yet known. An *inquiry* is, as the name implies, a *question*, put, not to nature at large and at random, but to some *part* of it, which is taken to be relevant and to contain a possible answer to the inquirer's question. Now this dependence of inquiry upon problems springs no doubt from the psychological fact that until there is something put before it the mind cannot get to work upon it; but it is surely a fact of the utmost logical significance, and it is astounding that the logical tradition should have slurred it over so completely.

Especially as in the very beginnings of logic some of the Greeks distinctly caught a glimpse of it. For, having started their reflection upon reasoning from a desire to regulate debate and to argue a case at law, they naturally noticed that there are two sides (at least) to every question. Accordingly, Protagoras appears to have taught systematically that there were always two reasonings (*λόγοι*) to be considered,[15] Socrates treated scientific inquiry as an extension of the art of cross-examination, and Plato conceived the search for ideal truth as a 'dialectical' process, as a sort of dialogue of the soul with itself. Now this whole doctrine is equally good as logic and as psychology. It is profoundly true of the inquirer's mind; he must be keenly alive, not only to the evidence *for*, but also to that *against* his working theory. But it is also true of the logical nature of inquiry that it is a process of determining *which* of the alleged 'facts' and of the theories to interpret them are real and true. Inquiry logically 'presupposes' a conflict between the data, and a dispute about them.

Unfortunately, however, the conception of scientific research as an inquiry lapses from the logical consciousness in consequence of Aristotle's work. His discovery of the forms and formulas of demonstration overshadowed it, and restored the reign of dogma which is so congenial to the authorities everywhere.[16] The true conception of inquiry does not revive again until our days, when Mr. Alfred Sidgwick and Professor John Dewey have endeavoured, not with the success they deserved, to reopen the eyes of logicians to the facts of the scientific situation.

§22. To conceive an inquiry as a question then is, we see, implicitly to conceive it as having a plurality of answers, all of which have to be examined. All these answers are initially hypotheses, and a choice has to be made between them. This renders the recognition of alternatives a paramount necessity for a logic of discovery, which can no longer dismiss them with a jejune chapter on 'disjunctive propositions'. Their existence is no longer to be treated as an annoying complication which delays the progress of science, but must be taken to inhere in the logical nature of problems, and to be essential to their proper elucidation.

Logic, therefore, should regard it as its duty to inquire (1) how the

inquirer is furnished with an adequate supply of theories for analysing and testing the apparent facts of his subject, (2) what methods are used to sift hypotheses and to select the more valuable, and (3) if it can, to add some hints as to how theories and methods *ought* to be handled.

(1) To the first question there is no exhaustive answer. No logic can guarantee that *all* the possible theories which concern the facts under inquiry will be available. They may not yet have occurred to any human mind, and may never do so. This alone ought to be considered a fatal objection to all methods which presuppose exhaustiveness, and are pressed by the logician upon the man of science. It ought to dispose of methods which demand that *all* the facts should be assembled before theorizing is begun, or that *all* the alternatives should be stated and the true one extracted by the successive elimination of the false ones, or that define a 'cause' as reciprocating with its 'effect', and assume that the true cause has been discovered when no other has been thought of, or that if a theory works we may take it that it alone will do so and is (absolutely) true. All these notions demand an impossible exhaustion of the alternatives, and try to convert a (psychological) failure to think of any more into a logical proof that there are no more. And they all regard the plurality of alternatives as a hindrance to be got rid of, and not as a safeguard and a help to proper inquiry.

Hence the real difficulty was not perceived, viz. that there is no formal guarantee that the supply of hypotheses for use upon the facts in any inquiry will be adequate. It may well be that for lack of a good working theory to go upon, all the theorizing on a subject proves vain and sterile. In the beginnings of all the sciences this sort of condition always exists and often lasts for centuries, and it is a main reason why some sciences make little progress even now.

Nevertheless, the difficulty is not in practice as fatal as it looks on paper. It is probable that the inquirer will in fact usually have a supply of alternatives to start from. For (*a*) he will naturally select a subject in which there are disputed points. And (*b*), what is even more important, human minds are naturally various: they put, therefore, different interpretations on the same facts and value them differently. Some are attracted by novelty, others by orthodoxy; some incline to one type of theory and method of inquiry, others to another. Hence in any inquiry upon which a number of minds are actively engaged, there will always be differences of opinion, and these will be most marked in the rapidly growing regions of every progressive science, which, like the growing cells in the trunk of a tree, are always on the outskirts. There will always be a conservative and a liberal party, even in science, and the clash between their views will always provide alternative solutions of problems, the comparative merits of which the inquirer

can examine. But the sciences owe their progress largely to the man who raises new questions, and should provide for him in their organization.

§23. It should be noted further that if this feature in discovery were properly recognized and emphasized, it would have important educational and ethical effects. At present the study of logic can hardly be said to liberalize and broaden the mind or to improve the temper. So long as its chief interest is in a theory of absolute proof and complete certainty, it will tend to breed pedants and bigots. The effect would be very different if an adequate logic of discovery had imbued the mind with an ever-present thought that every subject may and must be considered from several points of view, and that an inquirer should beware of letting his predilections and preconceptions blind him to possible alternatives. The logical attitude of inquiry, when fully understood, demands a tolerant and open mind, and excludes the narrow-mindedness and dogmatism which the theory of proof has fostered by its pretence of showing that there was but one truth and one inevitable way of reaching it. Moreover, the necessity of continually choosing between a number of alternatives should cultivate a judicial temper, conducing to fair-mindedness and consideration towards the views of others. For a mind which is in the habit of choosing between alternatives must be impressed by the facts that there is something to be said for the views it does not accept, that the view accepted is often not so very much superior to those rejected, and that new facts and new knowledge may always revive views which were supposed to be defunct.

Of course our natural dogmatism will take alarm at the flabby toleration of ideas which this attitude seems to imply. It will be objected that no one who can see the good and truth in beliefs he does not accept, can really be strenuous in upholding those he does. The full answer to this bigot's argument can only be appreciated when the attitude of progressive science is fully understood (cf. §33), but in general it may be pointed out that a power of first weighing alternatives, choosing the best and acting upon it strenuously, is precisely what life demands of us at every step. It should not, therefore, be impossible to compass it in science.

§24. (2) To the second question of §22, viz. what are the methods used by the inquirer in sifting the alternative hypotheses in the field, and picking out the most valuable, the answer is comparatively easy. It is substantially the answer given by the pragmatist analysis of knowledge. That theory is preferred, and tends to be accepted as true, which for the time being *works* best. The formula looks simple, but needs more thinking out than its critics usually bestow upon it.

(*a*) It implies, of course, that *all* the alternatives (before the mind) 'work' more or less. They must be (or appear) scientifically plausible, and proffer a more or less satisfactory explanation of some or all of the

admitted 'facts'. This is why agencies like the Devil, who could once be extensively alleged to explain anything unusual, have dropped out of the purview of science.

(*b*) 'Working' must be conceived somewhat widely. Its *primary* appeal is to the accepted principles and recognized interests of the science; practically to 'work' means to conduce to the development of the science on the recognized lines, and the proper judges of what working' counts are the experts who cultivate each science.

(*c*) But there will often be complications due to certain disputable workings, of which the relevance is not yet established, and about these there will legitimately be differences of opinion. These should not be suppressed, but candidly argued out.

(*d*) Moreover, every *new* departure will be *pro tanto* disputable, because it will conflict more or less with the vested interests of the established doctrines. One great factor in the 'working' of a new truth is the extent to which it upsets, or is thought to upset, the old, and demands a reconstruction of beliefs, a correction of authorities, a revision of text-books, a renewal of plans, &c. Hence what works best in the abstract may not do so under the actual conditions. It may 'pay' a professor better to be 'orthodox' than to be an innovator, and he is usually quite alive to this, though it does not render him a good investment scientifically for the institution that appoints him. If then we looked at this side of the matter alone, the verdict would always go against the novelty. For very few new truths are fortunate enough to find the field free and unoccupied. Usually they have to spring up in a soil densely overgrown with a rank growth of prejudices, dogmas, and superstitions, to which the world is accustomed and even devoted. So they have to fight for an opening in which they can take root and grow up.

(*e*) The 'working', however, need not amount to a claim to represent 'the' truth. A discoverer may know that by reason of his deliberate use of fictions, his results have forfeited their claims to be strictly true; yet they may 'work' better than anything else in sight. The typical example here is, of course, mathematics. When physical objects are treated mathematically, they are identified by a fiction with the objects of pure mathematics, and it is only on this assumption that their behaviour can be calculated. They are, of course, vastly *more* than mathematical objects, but their surplus meaning becomes irrelevant wherever objects admit of mathematical treatment. And apart from the restriction of the claim to truth necessitated by the use of fictions, it should, of course, be recognized also that there are sound logical reasons for denying that truths which rest on their 'workings' can ever be 'absolute' (§26 *s.f.*) Their truth is pragmatic, and is *optimi iuris* only if pragmatism establishes that no other and no better truth exists.

(*f*) More specifically a very important form of working is the prediction

of events. Knowledge of the future is an almost universal object of human desire, which men have sought to compass by fair means and foul, and the calculation of the future is the avowed aim of many scientific inquiries. Hence there is nothing more potent to dispose the mind to accept a theory than the success of the predictions it has led to. Yet here again this form of 'working' differs generically from 'proof'. It is clear that prediction is not strictly proof. For predictions may be made with considerable accuracy by the aid of hypotheses which turn out to be false or impossible. Thus eclipses and other celestial events were predicted for centuries by means of the Ptolemaic astronomy, and they cannot be predicted even now with absolute accuracy. Indeed, physically speaking, absolute accuracy is unthinkable. No instrument and no organ of observation can be conceived to measure to more than a finite degree of accuracy, and the *best value* for any physical 'fact' will always be the mean of a number of good observations after all the accessible sources of error have been allowed for.

At no point, then, does the test of 'working' conduct to the notion that absolute truth is discoverable. But the right inference may be, not that the test is worthless, but that absolute truth is a chimera.

§25. (3) It cannot then be seriously disputed either that alternative hypotheses are always (more or less consciously) present to the mind of the inquirer, or that the working of a theory is in fact used, in all the sciences, to test its claim to be true. But does it follow that logic should bow to scientific fact and recognize these practices? Should it set itself to devise a *technique* for regulating the formation of hypotheses and the establishment of their truth by their working? It is here that the traditional logic demurs, and disputes begin. Nevertheless, strong reasons may be advanced for answering both questions in the affirmative.

(*a*) An abundance of hypotheses is a guarantee of great logical value that all the important facts will be properly observed. For it is evident that every theory will produce a certain *bias* in the observer. It will direct his attention upon those facts and those features which are *relevant* to his theory, and, more particularly, which *support* it. This is usually an advantage, because it helps him to select what is relevant to his inquiry from the chaos of events; but it will *pari passu* blind him to whatever does not seem to be related to, and to fit into, his theory. He will, therefore, fail to observe and to appreciate what will seem to him to have little or no scientific interest. And in so thinking he may be quite wrong.

The old theory of 'induction' thought to get over this difficulty by saying, 'Well, of course, *all* the facts must be observed.' It did not observe the fact that in practice this is impossible, and is never done. Nothing is observed but what the knowledge and preconceptions of the time make visible to the scientific eye. Of what is visible at any time only a small part

seems worthy of the scientific microscope. Complete observation, therefore, of literally all the facts is scientifically impracticable.

As a logical ideal also this notion of all-inclusiveness is absurd. If no inquiry could ever begin until *all* the facts had been assembled, how could anything be discovered until omniscience had been achieved, i.e. when there was nothing left to discover? For how are we to know that our assembly of 'facts' really is complete? And if literally all the facts have to be used as data in any inquiry, shall we not speedily find that every fact ramifies into infinity, and drags in the totality of reality, and a knowledge of all things present, past, and future? This 'logical ideal', therefore, renders inquiry impossible.

In point of fact the data of any inquiry are always a *selection*. They are such of the recognized facts as are thought to be *relevant*, i.e. to be truly 'facts' for the purpose in hand. But being a selection they involve us in the risk that we may have selected wrongly, and omitted what is important while admitting what is not. *From this risk there is no escape*. For we cannot effect a compromise by including merely so much of the facts as we can lay hold of. Not only does this yield no guarantee that everything that is needed has been included, but it may be a positive hindrance to try to include too much. For if our data grow into an unwieldy mass, they will not seem susceptible of any order or principle, and even the most penetrating inquirer will lose his way.

It is better, therefore, to give up altogether the idea of securing formal validity by postulating an all-inclusive exhaustiveness. The obvious alternative is to operate simultaneously with a plurality of theories, each of which means a certain ordering of the 'facts' relatively to what seems a relevant and promising point of view. Each will involve a selection and induce a bias; but with any luck they will neutralize each other's bias, and so will increase the probability that no really relevant fact has escaped notice. This will not satisfy the logical 'ideal', but in practice it means a good deal, and is enough for scientific progress. Of course it must be understood that the hypotheses employed are in a general way relevant to the problems and the condition of the sciences, and not random guesses. This proviso will cut down their exuberance even more than the limitations of the human imagination, which seems to be psychologically incapable of really departing very far from the suggestions of experience.

§26. When logic has recognized the use and value of 'working' as the test of truth, it must, however, make it clear to itself and to others both what precisely this test is, and what it can, and cannot, accomplish.

In the first place, it must be made clear that it is *not* a logical implication of the test that 'whatever works is true', and the reasons for disputing this dictum must be set forth. The fact is that we all have a strong psychological tendency to believe in the truth of what is found to work, without

much criticism of the sort and extent of the 'working'. But the logician should carefully investigate the various sorts of working that occur, and take special note of those which either do not themselves lay claim to full truth, or do not (ordinarily) have their claim conceded.

For example, '*fictions*' are not supposed to be strictly true; but they may 'work' and be 'as good as true', or 'pragmatically true', or 'sufficiently true for the purpose in hand'. They work, in fact, within limits; but these limits are *known*, and so they are not confused with full-fledged truths, to the applicability of which there are no known limits.

The case of '*methodological assumptions*' is more difficult and instructive, and is usually misconceived. In their case the existence of limits to their 'working' is either not known or not relevant, because they owe their adoption to their use and convenience in analysing and organizing a subject of inquiry. Thus the principle of Causation, the assumption that every event has a cause which determines it fully, is properly to be regarded as methodological. It declares merely that if we desire to calculate the course of events, it is scientifically convenient to treat events as if they had 'causes', from which their occurrence could be predicted, whether or not they have them in fact. This assumption may be purely methodological; it need not, and should not, be turned into a dogmatic, metaphysical denial that there may be indeterminate happenings. There may even be good reasons to suspect their occurrence, and indeterminism may be ultimately true, and yet scientific method may rightly ignore this possibility, because it would render the calculation of events impossible.[17] Even an indeterminist then is fully entitled to reason *as if* events were determined, and to search for 'causes', for the purely methodological reason that this enables him to calculate events, and that after all they may be calculable. So long as they work for scientific purposes it is not, in the case of methodological principles, necessary to raise the question of their metaphysical truth.

The 'lie' again is a curious case of 'working'. A lie works, as a rule, only so long as it passes for truth, and is believed to have the meaning and value its author claims for it; when it is 'found out', it ceases to work. Hence it can both work and fail to work at the same time, according as it is, or is not, known to be a 'lie'. Clearly nothing can be made of the lie logically, until this double aspect inherent in its nature is recognized; if the logician refuses to distinguish between the *persons* concerned in its making, acceptance, and rejection, it remains (like 'error' to Plato) an insoluble 'contradiction'. It is, however, a mere prejudice to refuse to make these distinctions.

The 'working' of hypotheses is by no means simple and unambiguous. It admits of infinite gradations in amount and kind, and the 'truth' which is implicated in 'working' is nothing essentially but an index of its logical value, and may vary in quantity between values which cannot be *psycholog-*

ically discriminated from zero and from 100% or 1 (= 'absolute' certainty). It is crude, therefore, to confront a scientific hypothesis with the rigid alternative 'either (absolutely) true, or (utterly) false'; its 'truth' really rests on its greater value, as compared with its competitors. Its value, then, is a question of more or less. The more extensively, conveniently, and economically a hypothesis works, the more value has it, i.e. the more likely is it to be called 'true', and to be supposed true absolutely: the more continuously and successfully the test of working has been applied to a doctrine, the greater the confidence and affection with which it is regarded, and the greater the presumption that it will continue to approve itself as true.

But, as we anticipated in §24 (s.f.), it is vain to expect to establish any absolute truth by this method. It provides truth with ever-growing probability, but never with absolute certainty. For, however well a theory works, the thought that one may hereafter be found to work better can never logically be excluded. Even if every one alive were perfectly satisfied, and no one could imagine any improvement in an accepted truth—and these conditions are by no means often realized—such psychological considerations would not disprove the logical possibility that the best known was not the best absolutely, and logic would continue to distinguish between a truth that was absolute, and one liable to one billionth chance of error. The latter chance could be disregarded for all practical and scientific purposes, and would not have the slightest psychological effect on the confidence with which the truth was regarded; but logically it would still be there. Science, therefore, has to resign itself to the conclusion that its method cannot conceivably attain to absolute truth, and to make the best of it.

§27. Curiously enough this conclusion is fully confirmed by Formal Logic. It prides itself on pointing out that there is a formal fallacy involved in establishing truth by 'working'. The essence of this method is to argue that if a theory is found to work (after the proper precautions have been taken), it is true. If e.g. the events anticipated by a theory occur, and nothing occurs that could not be anticipated, it grows more and more probable until it convinces every one. But ought it logically to have done this? The logician declares emphatically, it ought not. For the argument suffers from an incurable flaw, which has been recorded as a 'fallacy' for over 2,000 years. It is a flagrant 'affirmation of the consequent'; symbolically, it argues that *if A is, B is, but B is, ∴ A is*. Now this is not 'cogent' or 'valid'. That *A is* can be proved only from the premise '*only* if A is, B is', i.e. if A is the *only* theory which will account for the observed consequences. But this the fallacious method did not assert, and indeed could not assert. For that the best known is the best absolutely never can be proved (cf. §26); and even if they happened to be identical, and we had somehow stumbled upon an absolute truth, we should never know that this was so.

§28. To the logician this fact only seems to prove the superiority of his conception of 'proof'. He infers, consistently enough, that no inductive reasoning from 'facts', no verification of hypotheses by events, can possibly amount to proof. What he seeks to impress upon his pupils is that *verification is not proof and can never lead to it*.

He considers himself entitled to look down upon science accordingly, its evidence, its methods, and its reasonings, and to contrast them with the absoluteness of his own ideal of demonstration. He upholds its validity in spite of all the failures of the sciences to realize it. As a rule he seems willing to grant that some mathematical proofs amount to logical demonstration;[18] but if pressed he would confess that scientific truth was only probable, whereas certain metaphysical truths, such as the law of contradiction, alone were absolutely certain.

The scientist, of course, is not in a position to deny that the nature of his truth is such as has been stated: but he should not attempt to do so. He should content himself with scientific truth, and contend that at its best it is good enough for any one. And he can carry the war into Africa by a vigorous counter-attack.

(1) He can deny—for the reasons stated in §13—that the logician's formal 'proof' is as cogent and formally valid as the latter supposes, and show that after a conclusion has been '*proved*' true, it has still to *come true* before it can be trusted to be 'true'.

(2) He can point out that there is a serious *lacuna* in the logician's plea for his notion of 'proof'. The logician has assumed that the only alternative to his belief in absolutely certain premisses is complete scepticism, arguing that it must be possible to start from certainty, because otherwise no knowledge would be possible at all. He then urged 'but there clearly *is* knowledge—the sciences attest it', and consistently inferred that absolutely certain premisses must be obtainable. The more or less obvious failure of his attempts to explain their genesis by 'self-evidence', 'intuition', 'necessities of thought', &c. (§15), could not deter him from clinging to his belief, because the principles themselves seemed to him to be inevitable and to admit of no alternative.

In fact, however, there *is* a *via media* between scepticism and absolutism, and science safely pursues it, though logic has overlooked it. It is *not* necessary to start with absolutely certain premisses, because it is possible to adopt premisses hypothetically, to take them as true for the argument's sake and for the purposes of the inquiry, to experiment with them, and to revise them in the light of the results of such experiments. Thus their value may be judged and established, *after* their adoption, by the experimental results, and they may come to depend logically upon these, and not upon the processes (analogies, suggestions, guesses, fancies, &c.) which led to their adoption. If

they show themselves capable of advancing the science and solving its problems, confidence in their 'truth' increases progressively, and their initial assumption is justified. They *cease* to be 'hypotheses' and become 'facts', and even 'principles' beyond dispute. If they fail to 'work', they may be discarded in favour of others which are tried in their turn and similarly tested. Hence it is not true that what is uncertain to begin with must always remain so, nor is it hard to understand that hypothesis, willingness to believe, and belief may be the psychological forerunners of logical proof, which, nevertheless, rests not upon them, but upon the solid value of the results subsequently reached by their means. The certainty of scientific premisses then admits of definite growth, which at some point or other will overpower even the most obstinately sceptical temper. This point naturally lies at a greater distance from the starting-point for some minds than for others, but when it is reached, and when the last doubts and scruples have been overcome, the triumphant truth will *feel* absolutely certain, and to all intents and purposes will function as such. But the 'practical certainty' thus achieved will still be distinguishable in thought from the absolute certainty which logical theory mistakenly demanded. And logicians, from Plato downwards,[19] will be convicted of having failed to allow for the possibility that the certainty of premisses and principles may be a fruit of continuous experience and experiment, and to perceive that this is the method the sciences have actually employed. In short, necessary (needed) 'truths' need *not* be regarded as 'a priori', if it is seen how hypotheses are consolidated by experience.

(3) The scientist can deny that the ideal case, contemplated with so much satisfaction by the logician, can ever occur in actual knowing. He can point out that if the logical apparatus of demonstration is to work, it must be supplied with premisses that are absolutely true. But whence is the logician to obtain them? The 'self-evident' principles and 'necessary' axioms, for which so much has been claimed, have been shown (§15) to be highly disputable, and are themselves in need of support and verification. The truths which the sciences supply abundantly are all products of the method to which he takes exception. There are no scientific truths which have not to be, and have not been, verified, and if verification is logically vicious, and cannot amount to proof, they are not absolutely true. But if the premisses of a demonstration are not absolutely true, neither can its conclusion be. What then becomes first of the value, and ultimately of the 'validity', of an ideal of proof which can never be exemplified by actual reasoning, and serves only to condemn it?

(4) The ideal of absolute certainty may be repudiated altogether, even as an ideal, for sound scientific reasons. It may be shown that if it were possible it would be scientifically undesirable. For it would mean the creation of absolute bars to scientific progress. If truths existed which were

absolutely certain, this would mean that nothing more could be learnt about them, and nothing could be done to strengthen their position. No experience, no inquiry, no experiment, could any longer affect them, and add to or detract from their value. They could not, therefore, form avenues to further knowledge. They would simply be stops which would arrest scientific inquiry. But how could such things form an ideal of scientific knowledge? How could it be in the spirit, and to the interest, of science to recognize them? They would merely be for science brute facts which it was forbidden to investigate. And must not science on principle hold out for the right to inquire into everything, to test every belief, however true it may seem? How, then, can it be the ideal of science to adopt an ideal which would stop inquiry?

Nor will it suffice in reply to point to the fact that the sciences continually assume the truth of the premisses they argue from. For though this is often a convenient assumption for the purpose in hand, It is one thing to assume the truth of premisses for the purposes of an inquiry, and quite another to assume it absolutely. For in the former case our assumption may be, and should be, accompanied by a consciousness that upon another and fitting occasion the premisses now assumed to be true may themselves be inquired into: to regard them, therefore, as absolute is to misinterpret their logical condition.

There are no good reasons, then, why the sciences should surrender to the arbitrary demands of the traditional logic, and sacrifice their practices which have been sanctified by the successes of 2,000 years to theories which sprang from a misunderstanding of scientific procedure, and have since lost all contact with it. The original mistake was pardonable, but it ought not to be regarded as an insult to logic to require it to understand the procedure by which the sciences actually progress.

§29. The scientist then should not be terrified by the charge that his 'truths' are 'only probable'. For it is better to be satisfied with probabilities than to demand impossibilities and starve. Moreover, a high degree of probability means 'practical certainty', i.e. confidence enough to move to action. Such certainty so convinces and satisfies the mind that it cannot feel more certain about anything; the logical gap between it and absolute certainty is psychologically negligible. We are sacrificing, therefore, nothing but a superstition, nothing that has any value for us, by renouncing the demand for absolute truth and demonstrative 'proof', and we gain in return a charter of liberty. For to admit the essential progressiveness of scientific truth and its indefinite capacity for improvement means unlimited freedom to research into truths which are infinitely perfectible, because they are never 'absolute'. The ideal of the infinite perfectibility of truth, and the infinite progressiveness of science, is more than an adequate substitute

for the 'logical ideal' which is abandoned. For not only is it an ideal which works, but it really embodies a nobler aspiration than that which represented science as 'resting' in absolute perfection on fixed 'foundations' of 'eternal' truth. The sentiment which inspires this group of metaphors is given away by the word 'rest'. A science that desires to *rest* is one that is unwilling to *move* and *unable* to advance. Fixed 'foundations' are needed only for standing firm and standing still, and it turns out that what is strictly meant by 'eternal' is not that truths last for ever, but that they are not related to 'time' at all, and so have really no application to 'events'.[20]

On the other hand, a science which sincerely desires to progress needs fixed foundations as little as fixed ideas, and firm ground as little as assurances to 'rest' on. It needs only a starting-point, or jumping-off place, whence it can plunge into the unharvested seas of the unknown. Now the essence of a starting-point is to be a place you want to get away from, and its excellence lies in being such as to prompt you to leave it as easily and eagerly as possible. If, therefore, scientific 'principles' (*ἀρχαί*) are really to be starting-points, they need not, and must not, be so comfortable and so deceptively similar to 'absolute' truths as to tempt the scientific spirit to repose. They should be tentative assumptions which are gladly abandoned in the hope of reaching something better, stepping-stones to farther and higher things, which are valued for their consequences, and logically dependent on the conclusions to which they formed the premisses. The logic of science, therefore, has no reason to postulate stability or solidity for its initial principles: the most indispensable of them are only principles of method, and even of the tried and tested principles it arrives at the 'validity' (= strength) demanded is merely that they should be able to float the accumulated wealth of knowledge down the stream of time.

IV

§30. It is clear, then, that the time has come when Science should break decisively with the logical tradition, and proclaim a logic of its own which has always been implicit in its procedure. It must definitely declare that what it needs is not a logic which describes only the static relations of an unchanging system of knowledge, but one which is open to perceive motion, and willing to appreciate the dynamic process of a knowledge that never ceases to grow, and is never really stereotyped into a system. To show that such a logic is not inconceivable will be the endeavour of the concluding sections of this essay.

We have already had occasion to note many of the most important features of this logic. We have seen that logical, i.e. critical, reflection upon dis-

covery must start from, and be guided by, the conception of a scientific *problem* with which the process of knowing *experiments* (§21). This problem has, of course, to be attacked with the existing resources of a science, i.e. with the knowledge it possesses up to date. These resources form the scientific *capital* which is necessarily *risked* in research if it is to yield interest. It comprises (*a*) approved principles, (*b*) known facts, and (*c*) established meanings of words. About each of them a little more may advantageously be said.

(*a*) We have seen (§15) that the principles of any science could not rightly be conceived as inscrutable, ultimate, absolute certainties of divine descent, and acknowledging no human ancestry. We saw that they could be understood only as hypotheses which reflection upon a problem had somehow suggested to an ingenious mind, which had been provisionally adopted in order to explore and organize a subject of inquiry, and had finally been verified and confirmed by their success (§15(c), §24).

The principles thus accepted by a science are often regarded as descriptive of fact when they are merely methodological and convenient,[21] but this is a point of secondary importance. And even the most amply verified principles never quite lose their hypothetical character. So long as they are used, their meaning, scope, and truth are not absolutely fixed. They can be extended, restricted, and modified by the working of the principles.

§31. (*b*) It is really obvious to any critical reflection that when a science appeals to 'facts', it is really appealing to the facts *as known*, or supposed to be known. It cannot from the first presume its knowledge to be absolute, and, *pace* some of our 'neo-realists', ignore the question whether the alleged facts are facts at all, and so pretend to start from 'the facts as they really are'. Such uncritical temerity would only conduct to insoluble pseudo-problems like that with which King Charles plagued the nascent Royal Society, as to *why* the weight of a bucket full of water was not increased when a fish was added to it. If, however, it is acknowledged that the 'facts' involved in a scientific inquiry are always relative to a definite state and date in the history of a science, several important corollaries follow.

(1) Being dependent on the condition of the science, the facts of a science will not all be 'facts'. That is, not all that is relevant to the interest of the science will actually be within its cognizance, not all that turns out to be fact, and is antedated when it has been discovered, is as yet recognized as fact. It will be this fact, more over, which constitutes the science a field for inquiry and renders it progressive.

(2) Though the 'facts' of the moment fail to include all the facts, they often manage to include too much. The 'facts' are not all fact. They include unknown and often large, amounts of prejudice, illusion, error, superstition, and other remnants of the lurid past and stormy youth of every science. It is useless to repine at this inevitable consequence of past history,

and childish to try to purge it away by defining as science only what *ex hypothesi* is free from such contaminations. To restrict the logical interest to science *qua* science, which is by definition infallible, is to forbid any logical treatment of the sciences we actually possess. But the logician should surely be encouraged to study the processes by which the sciences correct their initial errors and consolidate their acquisitions.

(3) It follows on both these grounds that the 'facts' of which a science takes cognizance will be subject to change. As the science grows, 'new' facts will come into it, and old facts will be discarded as erroneous. In particular, facts which at first were only inferred on theoretic grounds will be actually observed, even as 'Neptune' was the fruit of a theory about the perturbations of Uranus. Hence the antithesis of 'theory' and 'fact' must not be taken as absolute: they must be expected to play into each other's hands. It is the business of theories to forecast 'facts', and of facts to form points of departure for theories, which again, when verified by the new facts to which they have successfully led, will extend the borders of knowledge. Incidentally, however, this interaction between fact and theory often renders it difficult to decide whether a scientific doctrine is better regarded as a 'theory' or as a 'fact', and leads to differences of opinion. But it can hardly be wrong to advise the scientific mind to practise hospitality towards new facts, while it is no less fitting to show generosity towards old servants that have done their work and can now advantageously be retired. It is ungrateful to abuse them as 'errors', and to despise them with the lofty contempt of the higher knowledge to which they have conducted. And in both cases the truly scientific attitude may be attained if an element of fanaticism is not imported into the conception of truth by attributing to it an absoluteness which no human truth in fact possesses.

(4) The same need for tolerance is emphasized by a further corollary of the conception of fact which has been advocated. It seems at first a paradox, but on reflection appears to be evident, that the 'facts' will not only *look* different but may really *be* different from different points of view and for different purposes. Once we permit ourselves to consider this possibility we shall easily perceive that there often are conflicts between 'facts', such that they cannot coexist for an abstract logic, while, nevertheless, each of the conflicting facts may be intelligible relatively to its own presuppositions and true under its own conditions, so that the 'contradiction' between them is generated merely because the logical statement has abstracted from the special circumstances of the case.

This situation is, of course, recognized very familiarly and universally in the case of *value-judgments*. We are all willing to admit that one man's meat may be another man's poison, that it is vain to dispute about tastes, and that the same mode of living does not suit all constitutions and all cir-

cumstances. We recognize, too, that profound differences of opinion and attitude exist, and always have existed, among men. The temperamental differences which make e.g. one man indolent another enterprising, one man daring another prudent, one a conservative another a radical, one an optimist another a pessimist, are so deeply rooted in human nature as to be, humanly speaking, ineradicable. And if so, must it not be conceded that situations occur which will inevitably, consistently, *and rightly*, be judged differently by these different persons?

Again, it should be noted that these differences in valuation are not merely subjective: they spring from objective differences in human nature, and are as objective as any other facts about it. For example, that certain persons dislike pork (because they cannot digest it), and hate cats (because their presence makes them feel ill), rests as much on a physiological fact of their constitution as that others suffer from 'hay fever'. Similarly, it is quite plausible to contend that 'every little boy and girl that is born alive, is born a little liberal or a conservative', and certainly the normal growth of conservatism as the individual mind ages is proof enough that changes of belief depend on psychological law, and are correlated with the hardening of tissue which is a general symptom of senescence. Again, is it possible to imagine a situation so bad or so good that it cannot be interpreted either optimistically or pessimistically? In most cases either interpretation is quite easy, and the choice between them is effected by sheer temperamental bias. If, then, we succeed in doing what the natural man will always find difficult, and regard such differences of opinion in a scientific and non-partisan way, must we not admit that *both* the conflicting standpoints are inevitable and justifiable? Neither can be pronounced wrong in general and *per se*, though in regard to a particular problem or occasion either may be. Let us conclude, then, that it may really be a 'fact' that the 'facts' justify one interpretation and attitude to one mind and another to another.

This argument is reinforced by the further consideration that even the most objective statements of fact involve *value-judgments* in their ultimate analysis. For they express, often explicitly and always implicitly, the choices and valuations by which a variety of pretenders to reality have been examined and sifted, and the most valuable have been declared 'truly real'. We have seen that in a scientific inquiry the 'facts' must always be taken as *alleged* facts, discovered up to date; hence a science must always be ready to defend the 'facts' it recognizes, when they are challenged, and to show wherein they excel conflicting allegations. The accepted 'facts' of a science, therefore, are always allegations which are thought to possess greater *value* than any known alternative; hence no sharp or absolute distinction between judgments of fact and judgments of value can be maintained. It becomes, moreover, quite possible that incompatible allegations of fact

may in the actual state of a science be so nearly balanced that there is no convincing reason to prefer one to another, or at any rate none that could prevail against any ordinary temperamental bias. Consequently, in such cases the bias will condition the visibility of the 'fact'; it will be bathed in a 'subjective' atmosphere, and the 'eye of faith' will be necessary to perceive it. No doubt such situations are inconvenient, and repellent to the scientific spirit; but they do not occur only in the misty regions of religion and philosophy, and scientific alternatives like 'chance' or 'design', 'miracle' or 'law', 'mechanism' or 'vitalism', determinism or indeterminism are essentially of this order. There is no reason, therefore, why logic should not recognize them and acknowledge that the scientific 'facts' may be ambiguous, in the sense that further experience and experiments are needed to determine their character. As a rule, to judge by the past, further inquiry will resolve the ambiguity; but it may well be an illusion to assume that it must do so, and in some of the most important cases the decision will certainly be long in coming.

Thus the student of animal behaviour will probably long be left with a choice between minimizing the displays of animal intelligence and assimilating them to the human, while it will probably always be possible to put a pessimistic or an optimistic interpretation upon the facts of life as a whole.

A scientific logic therefore should radically disabuse the mind of any excessive trust in 'facts'. It is a superstition that 'facts' are plain, straightforward, and easy to discover; they are often subtle and recondite and relative to circumstances, changing their aspect to suit their scientific environment like any chameleon.

§32. (c) In considering the use of words in research, one cannot of course overlook the obvious fact that the employment of words is primarily determined by their established meanings, and that these greatly limit our freedom to use them as we please. Words naturally and inevitably suggest their established uses by their mere sounds, and should always be used with a proper respect for their past history and present meaning. To be sensitive to this appeal is the mark of the educated scholar; but it does not require the investigator to exhaust his energies in vain attempts to stereotype absolutely the current meanings, and so to deprive words of their essential function. For their essential function is after all to be instruments for the conveying of actual meaning, and actual meanings are always more or less new (cf. §12). It occurs to a particular person in a particular situation to express and convey a meaning which has never in its full concreteness occurred before. If the novelty about this situation is appreciable and important, it may well be that the old words will not fully succeed in conveying the new meaning; and yet we shall always endeavour to use them,

and select from the accumulated wealth of language the words which will suffice for our purpose. For the alternative is worse; we cannot always be coining new words for every new meaning we may desire to convey; they would not be understood or remembered, and even if they were, a science that employed nothing but technical terms, and was moreover compelled continually to change them, because it would not use them to convey new meanings, would speedily degenerate into an abstruse game, and could make no progress. How impracticable such a policy would be may be gauged by the grave inconvenience which even now systematists cause by so frequently changing the scientific names of plants and animals. It is indispensable, therefore, that words should retain a certain measure of plasticity, in virtue of which they can be transferred from old situations to new and be used to convey new meanings. Nor is there usually any difficulty about thus imposing new duties on the old terms; under the particular circumstances of the situation even wide departures from the established meanings may remain intelligible, and so the progress of science is not impeded.

The traditional logic, however, cannot treat the matter so lightly. For the plasticity of words may always engender a conflict between the old meaning and the new, between the scientific use of terms and the traditional conventions about their use. And this can always be represented as a defiance of the 'laws of thought'. For if the meaning of '*A*' may be altered by the growth of knowledge, it will no longer be true that everything once called '*A*' is truly *A*, nor that what was once incompatible with *A* will continue to be so for all time. Hence it is no longer necessarily true that '*A* is *A*', and that *A* cannot both be and not be *B*. It may be both in different senses, and in what sense '*A*' and '*B*' should be taken may be precisely the point at issue. Thus verbal contradiction ceases to be a clear proof of error; it may be only a much-needed warning that our terms have been developing new meanings. Hence, the 'laws' of Identity and Contradiction lose their last claims to be regarded as statements of fact, and have to be conceived as ideal postulates of just so much stability of meaning as is requisite for effective understanding.[22] They can be applied to reality only hypothetically, i.e. experimentally to discover whether in a given situation the natural growth in the meaning of the terms may *rightly* be treated as irrelevant, and does not vitiate the conclusion which the reasoning forecasts. Now this problem can never be settled a priori by reasoning, but only by subsequent experience. Reasoning may forecast a result which experience fails to confirm; when we discover that comets' tails are not attracted by the sun but repelled, we do not declare the facts 'contradictory', but modify our notion of 'gravitation', and conceive it as inferior to 'light pressure' in its effects upon particles of a certain minuteness.

It follows that no merely logical scrutiny of the terms of an argument can ever settle a scientific question. If a 'contradiction' is real, it means either a difference of opinion between those who make the incompatible assertions, or, in the case of a real 'self-contradiction', the uttering of 'nonsense' and a failure to propound a meaning at all. But even the most glaring 'contradictions' may only be apparent, i.e. verbal: when we inquire into their actual meaning we may find that they refer to a context in which its terms are perfectly compatible. Thus the existence of a 'round square' may be predicated of London, and a 'triangle's' angles may equal or may exceed two right angles, according as it belongs to Euclid's geometry or to Riemann's.

§33. The problem of discovery, therefore, is never one of which the solution can be guaranteed in advance. The resources of a science are never sufficient to assure us of a prosperous issue of the research, though, rightly understood, they yield important safeguards. A recognition of the instrumental value of words as ancillary to meaning, and of the limitations under which they labour, will guard the inquirer against the terrible verbalism to which logic has been enslaved. A critical attitude towards allegations about 'facts' will enable him to minimize the dangers of error, deception, and bigotry. A conception of 'principles' as working hypotheses will discourage a servile and superstitious reverence for them, and justify the fullest freedom to experiment with whatever ideas hold out hopes of verification and of scientific progress. Together these three considerations will pretty thoroughly emancipate inquiry from the shackles of any mechanical scheme of 'proof'. Indeed, proof in the old formal sense will have become a chimera. It will no longer be possible to cherish the belief in a self-sufficing, self-satisfied form of absolute proof, of which the pure logician imagined himself the possessor and retailer.

Scientific proof, on the other hand, will be neither absolute nor formal. It will not be absolute, because it will always be relative to the actual condition of a science; it will not be formal, because it will never be absolute. It will only be the best known interpretation, and will always imply alternatives, to some of which it may wrongly have been preferred, while to others it may be destined to succumb (§§26, 27). It will be 'valid' so long as it is the strongest; but to it, as to the priest of Diana Nemorensis, as to Uranus and Cronus, will come the day when it is invalidated and superseded by a stronger and better, descended, it may well be, from itself. Scientific proof then will always be an *evaluation* of evidence, a making the most of the available resources of a science, a question of the *comparative values* of rival interpretations.

It stands to reason that such an evaluation cannot operate merely with the criteria of formal logic. Indeed, of the processes known to the traditional logic, only those which *cannot* be represented as 'formally valid' will

be exemplified in scientific knowing. It will not be possible to find any genuine cases of absolute certainty or unconditional proof; but analogies, probabilities, hypotheses, alternatives, even fallacies and fictions, will abound, and will somehow have to be discounted. Clearly the evaluation of such things will be a delicate affair; it cannot be accomplished by reciting *Barbara Celarent* and crudely applying a few simple mechanical formulas. It will demand the energetic co-operation of the whole intelligence, and indeed of the whole personality, and cannot scorn the aid of psychological factors. For it is plain that the evaluation of a complicated scientific situation will require both expert knowledge of scientific detail and philosophic grasp of general principles and connexions; it will need also 'tact', 'judgment', an 'eye from experience', and a host of similar qualities that elude precise verbal formulation. It will no longer be practicable to flatter mediocrity and dullness, and to impede discovery, by proclaiming methods that dispense with imagination, ingenuity, originality, boldness, enterprise, and vainly endeavour to put genius for discovery on a par with mindless pedantry in applying stereotyped and sterile rules.

§34. But just because a logic that recognizes the actual process of discovery does not presume to dictate formal methods to the discoverer, and leaves him a very free hand, it does not relieve him of any of the responsibility for conducting his researches to a prosperous issue. As there is no longer any pretence that any logical machinery can be devised to guarantee success, success and failure become his personal achievements. If he fails, he can no longer plead that it is not his fault, seeing that he has kept every letter of the law and broken no logical rule. This may be precisely *why* he failed. Perhaps he should have taken risks. He may have gathered such enormous masses of fact that he could no longer see through them, nor select the few that were relevant to his problem. He may have been so sensible of the need for caution that he dared not speculate or move. He may have devoted himself to unimportant problems or missed the important sides of important problems, or have wandered away into barren wastes of dialectics, or have got bogged in a mire of verbalism, or have pursued elusive phantoms of unverifiable speculations. For there are clearly many ways of failing. Only in whatever way he fails, his personal failure is *pro tanto* a failure of science to progress. Every science has somehow to get hold of a clue to guide it through the labyrinth of fact, and this clue has to lead it right, though it need not 'follow necessarily' from previous knowledge.

Nevertheless, if, and in so far as, a researcher succeeds in making a discovery, some of his personal credit is reflected upon his methods *ex post facto*. Their success does not, of course, establish their formal 'validity'; but it stops the mouth of those who argued that what is 'invalid' must be worthless. Methods that succeed must have *value*, a greater thing than

'validity', however far and however boldly they departed from the canons of formal proof. The success has shown that *in this case* the inquirer was right to select the facts he fixed upon as significant, and to neglect the rest as irrelevant, to connect them as he did by the 'laws' he applied to them, to theorize about them as he did, to perceive the analogies, to weigh the chances, as he did, to speculate and to run the risks he did. But only in this case. In the very next case, which he takes to be 'essentially the same' as the last, and as nearly analogous as is humanly possible, lie may find that the differences (which always exist between cases) are relevant, and that his methods and assumptions have to be modified to cope with it successfully. But he should not be discouraged. For the ultimate ground of the whole cognitive procedure by which we analyse the flow of events is empirical. It is only an empirical fact that knowledge is possible, i.e. that the course of events is such that human minds can analyse it at all, that is, can pick out and construct cases of 'the same', of which the course can be predicted by means of the (verbally) stable formulas we call 'the laws of nature'. For logic at any rate these laws are neither supernatural behests nor metaphysical entities: they are forms for classifying happenings, in which the blanks have to be filled in with the variable values of the particular happenings. What the *right* values are, and even what is the *right* formula to apply, will always depend on the particular case which forms the actual problem. It is only the empirical fact that the differences between problems may so often be treated as irrelevant which generates the illusion that problems may be solved in advance by general formulas: in reality every problem in its full concreteness is unique, and we are never absolutely sure that it will submit to the rule we apply to it. Hence it is solved only when we come to it and find it amenable to our methods; in principle it eludes logical prediction, because it can be known as a 'case' of the successful 'law' only *after* the experiment has confirmed the forecast. To the inquirer, therefore, no result can seem certain until it has occurred; it is only *ex post facto* that the logician can describe it as an indubitable case of some law from which it follows of necessity. But in so doing he has changed it, and repudiated the duty of describing actual knowing. All he is doing is to rearrange a piece of knowledge, acquired without his aid by means he condemns as illicit, in the order he is pleased to call 'logical'. This order has a certain aesthetic value, but it is emphatically *not* the order of discovery, and throws no light on the process of acquiring knowledge.

§35. What function then can be assigned to the logician's reflection on the workings of science? In view of his failure to substantiate his claim to have provided a model for inquiry in his scheme of 'proof', it might seem that he was either useless or pernicious. Useless, if he merely devotes himself to constructing 'ideals of proof' which he admits to have no relation to

the actual problems of science; pernicious, if he is prompted by these ideals to make demands with which no science can comply, and to deliver judgments which would paralyse the science that attempted to carry them into execution. Fortunately, he cannot enforce them, and the sciences actually go on their way, ignoring such 'logic'. The proper inference from his impotence is that he would do well to take up a position which is more useful and more influential, if less pretentious.

Let the logician then give up the pretence of dictating to the sciences and of judging the worth of scientific truth by rigid forms of absolute proof; let him abandon the vain pursuit of 'validity'. Nay, more, let him renounce the claim to determine the scientific value of an argument by a mere inspection of its logical character. Let him confess that what alone he can criticize is the incongruities in its verbal expression, and that its real value lies beyond his ken. If he will concede all this, his reward will be that he has vindicated for logic an important right of more real value than the claims he has abandoned. For he will have obtained the right of summoning the sciences to state their results in intelligible and consistent terms, and to confront them with a problem when they do not. Just because he does not presume to condemn them, and no longer ventures to declare that incompatible and verbally 'contradictory' results are necessarily wrong and worthless, but only urges that they are not intelligible as they stand, and need to be reworded or inquired into farther, he gains the right of *raising problems*, and stimulates the sciences to proceed to solve them.

It should be noted, moreover, that the problems thus raised are general, not special, i.e. are properly logical. The problem about 'contradictory' results is one about meaning, for contradictory assertions cancel each other's (apparent) meaning. This enables the logician to keep the sciences engaged upon the logical problem of solving the discrepancies between their results, so long as the sciences do not form one complete and congruous system, i.e. indefinitely.

Similarly the denial that truth is absolute is a general truth that affects all the sciences. It should stimulate them all, for it means that no statement is so perfect that it cannot be bettered and that no limits can be set to the progress of science.

Other topics which are 'logical', because they concern the general significance of scientific procedure and not the solution of particular problems, are the nature and importance of selecting 'facts' and the 'laws' they are taken to exemplify, the experimental attitude and the framing of hypotheses, the evaluation of probabilities and alternatives, the estimation of relevance and of verifications and of the amounts of the latter which are requisite and the sorts of it which are relevant. On all these points logic has hitherto had little or nothing to say, mainly because they did not lend

themselves to formal treatment. Lastly, there are two extremely important subjects, which are so vital to the logic of discovery that a brief discussion of them may fitly conclude this essay. We may call them the problem of Novelty and the problem of Risk.

§36. In Logic we are not concerned with the metaphysics of Novelty, i.e. with the problem of whether there ever enter the world things that are really and truly unforeseen and unpredictable, that pop into it from nowhere, and if so, whether and how we can understand such things. This problem is deep and difficult, and so, until recently, philosophers have fought shy of it, and used to settle it off-hand by a flat denial that such things could be in a 'rational' universe. But now that M. Bergson has given us a radically new metaphysic, and that we are beginning to perceive that the principles used to dispose of the matter, viz. causality and the conservation of energy, are essentially methodological, the question has become an open one.

Logic, however, has no need to probe it; it can treat it more simply. For its purposes it can, and must, treat novelty as a real logical fact. It is a psychological fact, and logic must note it, that every moment of our life has for us a certain flavour of newness; it is also a fact that every real judgment that is ever made had a certain relation to novelty.[23] Its maker believes, either that it embodies a new truth, or that though known to him it is new to his hearers. If he did not believe this he would have no motive to make it. It would be stale repetition, devoid of interest or value alike to him and to others, whom he would merely bore by telling them what they, too, knew already.

So far, then, the logical nature of novelty seems simple. It gives rise to problems, however, when we consider the relation of the new truth to the old. It is clear, in the first place, that the new truth must affect the old. Even where we are willing to minimize its novelty, and to call it merely an 'extension' of what we already knew, it must modify it and change its value. For in the light of the new developments the old truth *means more*: it has relations in an enlarged field of knowledge. Moreover, the new truth is often not merely an extension but also a *correction*, and the effect of the correction may sometimes be revolutionary. It may even seem to upset the old beliefs altogether, though human ingenuity is far too fertile in building bridges (often only verbal) from the old to the new to allow this impression to be permanent. Still in all these cases there is more or less discrepancy between the new and the old.

The logician, however, should insist that this fact should not be blinked. He should recognize the discrepancy, and emphasize its significance, just because for other purposes it is usually convenient to ignore it. For it is not only the source of real ambiguity in the facts of science, and of

the important differences of opinion among men and of their obstinate persistence, but the justification of the policy of open-mindedness and toleration which he regards as necessary to scientific progress. Inasmuch as of every discrepancy between the old truth and the new it will be possible to take two views, and either to cling to the old or to put one's trust in the new, there will always be a party of conservation and a party of innovation, or otherwise a conservative and a liberal bias, in science as in politics. It is, moreover, futile to discuss, in the abstract, which of them is right: for it would clearly be fatal to go all lengths with either. Science could make no progress, either if every novelty were at once condemned and suppressed because of its failure to conform with the accepted doctrine, or if everything new were hailed as true regardless of its concordance with the old truth, so that the course of science became a series of radical revolutions that had no consistent direction. In concrete cases of course both sides are sometimes right, though historically the stronger bias men have shown has been the conservative. What usually happens is that the new truth is first denounced as an immoral invention which is subversive of all intelligible order and cosmic rationality; it is then quietly assimilated and not infrequently converted in the end into the strongest support of the beliefs it was alleged to subvert. But it would be a real gain if logic, by viewing this natural feature of knowing in its generality, could induce men of science to take it more calmly. If it were generally recognized that every claim to new truth, however great the advantages it promises, necessarily entails certain inconveniences, because the old beliefs and notions have to be modified and readjusted, and this may involve too great an effort to be worth while, or an effort too great for certain minds, it would be seen that there are two sides to every question, and that both may be in a way legitimate. If, in addition, we recognize that the parties concerned usually have a bias which may render them dangerously blind to the case of the other side, and that both should be admonished to discount their bias duly, we shall have done not a little to secure fair-minded[24] consideration, reasonable discussion, and intelligent choice between the alternatives. And all this surely conduces to scientific progress.

It is clear, then, that the problem of relating the new to the old always exists, and has a vital influence on the fortunes of every science. But it is not capable of any formal or abstract solution a priori. Which is to be preferred is a matter which must be left to the expert who is cognizant of the circumstances of the case: logic can help only by broadening his mind, and putting him on his guard against his own personal bias, which might otherwise unconsciously determine his decision.

§37. To admit that scientific inquiries concern problems, and that to every problem (at least) two solutions may be propounded, between which

a choice has to be made, is to admit that knowledge *must take risks* in order to progress. For there is always the risk of choosing the wrong solution of a problem, i.e. the one which works *less* well, just as there are always risks of choosing a bad problem and of selecting the wrong facts and the wrong theories to explain them withal. Nevertheless, we ought not to resent this fact. For the taking of risks is inevitable: we cannot escape it either by refusing to inquire or by refusing to decide. For in either case we run the risk of missing a valuable truth.

It is better, therefore, to recognize that every act of knowing must involve risks, just as every act of living does; and this for the simple reason that knowing is an activity comprised in living, and every judgment is an *act*, which might have been left undone, or for which another might have been substituted. The readiness of the new conception of logic to emphasize the existence of risks in an all reasoning, and to sanction the willingness to take them, contrasts markedly with the vain efforts of the old logic to play for safety, and to make no move that was not absolutely necessary (cf. §10). This was why it postulated absolutely certain premisses, and would contemplate nothing but 'valid' forms of reasoning. In its desire to elevate its proofs above the perplexities and vicissitudes of mundane problems, the old logic was expressing and comforting a deep-seated human craving: for life is so replete with the most hideous risks that it is a natural instinct to clutch at any promise of security. Hence the passionate and almost religious reverence with which formal logic has been regarded for over 2,000 years. Many philosophers still worship the syllogism, because it seems to them an incomparable exemplar of absolute security firmly fixed in the sphere of immutable necessity far above the flux of phenomena, which it illumines with its steady radiance. But to exalt in this way its ideal of proof, the old logic had to pay a heavy price. The price was cutting the ideal wholly adrift from the actual, contemplating exclusively a situation which could never occur in real life, and. leaving all actual inquiry to its devices, unstudied, uncriticized, and unaided. Thus, the splendid aloofness of the logical ideal was purchased by a total repudiation of actual science. To many philosophic minds this price does not seem excessive. The more useless truth is made to appear, the purer and more admirable it seems to them. An ideal, they think, should be like Aristotle's 'god'; it should attract, without uplifting, and without running the risk of contamination by the dirty work of life.

These philosophers have always claimed for their attitude that it is philosophic *par excellence*. But their claim, besides being based on a somewhat rare personal idiosyncrasy, is not really sound. It is neither self-consistent nor a sound policy for life. An ideal which repudiates the actual, and yet professes somehow to be it exemplar, is left in the impossible condition of the Platonic 'Idea'. If it were as superhuman as it claims to be, no

human mind could even speculate about it. And we have seen (§13) that it is not in the end possible to devise a form of proof which is bomb-proof against the attacks of experience and superior to verification.

Is it not wiser, then, to admit that life has its claims upon science, and science upon logic? We simply *must* have a science that can handle human life and meet human needs, and does not degenerate into a game with arbitrary and fantastic rules which depart from the actual conditions of life in any direction and to any distance unrestrained imagination carries them; and our logic must deign to study such a science. If to do so it has to 'scrap' its antique 'ideals', to abandon its pose of an inhuman, impassible, infallible aloofness, and to interest itself in the doubting, questioning, guessing, trying, risking, blundering, correcting, achieving that make up the sum of human knowledge, it will receive an ample reward in the gratitude of man for a logic that has entered his service, and in the salutary influence which it will exercise upon his actions.

Conclusions

(1) We have shown, negatively, that the notion of a form of proof, by which conclusions can be absolutely demonstrated by dint of pure logic alone, is a delusion. No such form can be constructed (§§13, 15), and if it could, it could neither find scientific material worthy of it (§28), nor contain the material which is fabricated by the sciences.

(2) We have thereby shown that formal logic cannot represent the logical nature of discovery or of any of the processes of actual knowing, and must condemn them all as 'invalid' (§§18, 20, 26, 28).

(3) We have seen that a logic which attempts to understand actual knowing cannot prescribe to the sciences how they are to solve their problems (§33).

(4) But it *can* grasp the general character of scientific procedure, appreciate its difficulties and dangers, understand the expedients for meeting them, and trace it to its roots in the constitution of the human mind and in the needs of life (§35).

(5) In virtue of its general grasp of the aim and method of the sciences a logic of science can at times offer advice to scientists: it may draw their attention to the general problems which their work involves, but which are apt to be overlooked by specialists, such as the claims of consistency and novelty and the regulation of risks (§36). Or, better still, if they will study it themselves, it may broaden their minds and enable them to handle these general problems for themselves far more effectively than a pure logician could do it for them.

(6) By abandoning its pretensions to rigour and conclusiveness logic does not really lose: it gains immensely by coming into contact with science and life, and becoming of use in the world.

NOTES

1. Published by Macmillan, 1912.
2. Cf. Mr. H. W. B. Joseph's *Logic*, p. 548.
3. Cf. §§10, 28.
4. *Post. Anal.* i. 2. 71 b 20.
5. I.e. truth-claim.
6. Cf. *Formal Logic*, p. 173.
7. Mr. Alfred Sidgwick has been pointing out for the past twenty years how fatal this difficulty is to the traditional notion of formal validity; nor has any logician confuted his argument, or even shown that he apprehended its meaning and scope. It would seem, therefore, that the condition of formal logic is so precarious that its only chance of survival lies in hushing up all the vital objections to its stereotyped doctrines. But is not the policy of ignoring unanswerable objections the sure mark of a pseudo-science?
8. The latest I have noticed occurs in Abercrombie's *Inquiries concerning the Intellectual Powers* (1830); it reads very strangely now.
9. Controversially the criticism of 'self-evidence' has been met in the same way as that of the 'validity' of the syllogism, i.e. by total silence.
10. *Anal. Post.* i. 34.
11. It may be suggested that there is a similar confusion on this question: when history is called a science, it is often forgotten that its data are essentially such that they can only occur once, while the material of the other sciences is such that cases of 'the same' may always be found in it. But neither need it be denied on this account that history can, and should, be written in a scientific spirit.
12. *Science et Méthode*, ch. iii, L'Invention mathématique.
13. *Republic*, 511c.
14. *Anal. Post.* i. l.
15. Diogenes Laertius, ix. 51.
16. Cf. §3.
17. Or more difficult, if the indetermination is conceived as limited.
18. This we saw (§4) is really a mistake: mathematical proofs are really hypothetical, and deduced from the initial postulates and definitions. They hold of the ideal objects of mathematics, but that they can be advantageously applied to reality is merely an empirical fact, and it is not inconceivable that the world should grow *more* recalcitrant to mathematical treatment, though actually it has grown *less* so.
19. In *Republic* vi his whole argument for the existence of metaphysical truth, culminating in a supreme 'Idea of the Good', depends on the assumption that the 'hypotheses' of the sciences, being insecure originally, remain so until they are deduced from a (self-proving) 'unhypothetical principle'. This assumes, of course,

that they cannot be confirmed empirically by the results of their working, and exhibits the *lacuna* of logic in a typical way.

20. *Formal Logic*, ch. xxi, §7.

21. E.g. the 'accidental' distribution of variations in biology, for which see *Humanism*, pp. 146-50, and the postulates of causality and determinism in science generally (*Formal Logic*, ch. xx, §6, and *Studies in Humanism*, ch. xviii, §4).

22. Cf. §8 and *Formal Logic*, ch. x.

23. The 'novelty' which is claimed for the conclusion of a syllogism is only one case of this: in the traditional interpretation it is hopelessly at variance with the demand that it shall also follow from its premisses of necessity. Cf. *Formal Logic*, ch. xiv, §§8-10.

24. Usually, but wrongly, called 'dispassionate' or 'disinterested'. What is wanted is, not that the inquiring mind should take no interest in the conclusions it considers, but that, though it cares keenly and even passionately for one of them, it should yet be capable of sufficient self-control to consider fairly the case *against* the conclusion it favours. This mental attitude is probably best secured by caring more for truth than for a party victory, and is denominated a 'disinterested love of truth for its own sake'. But even so we love what we deem the truth, because it is the *best* thing to believe, and better (on the whole and in the end) than anything else that is propounded.

41

SCIENTIFIC METHOD

§1. Is There Only One Method of Knowing?

It has been customary to suppose, ever since Plato and Aristotle, that there are (at least) *two* methods of knowing, and that there is an essential difference between the way in which the mind grasps principles and the way in which it applies or uses them. Hence the deep chasm between 'a priori' and '*a posteriori*' truth, between 'deductive' and 'inductive' reasoning.

But we have seen good reason to question this tradition in both its assumptions. It cannot be maintained either that the two methods are independent of each other or that by itself either of them yields knowledge. Thus the idea of principles absolutely certain a priori has proved entirely elusive. Neither as 'intuitions' nor as 'necessities of thought' have principles been able to make good their claims to possess absolute truth and to be sufficient guides to knowledge. The principles accepted as true all have a long history behind them; they were all conceived in doubt and started life as postulates, and are all now the products and survivors of a secular struggle to know. They have acquired their present value and status by the

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Logic for Use: An Introduction to the Voluntarist Theory of Knowledge (London: G. Bell and Sons, 1929), pp. 353–415.

successful working of the sciences which employ them; their verification has made them 'true'. They are *not*, therefore, independent of the process of experience, but are its finest fruits. Moreover, quite apart from the implications of this genesis of principles, it is untrue that formally valid deductive reasoning from principles is *ipso facto* forthwith true (Chap. XV, §4). Our best 'deductions' have to be verified, and *gain* in logical value by coming true in fact. Till then they rank merely as intelligent anticipations, which guide expectation but do not coerce the future. They, too, therefore, are dependent on experience.

On the other hand, it has appeared that the attempt of 'induction' to reason from sheer fact is sheer illusion (Chap. XV, §7). *Absolute* fact is as much a fiction as absolute truth. For in our reasoning 'facts' are never *given* but always *taken*, and often *faked*. At best the 'facts' an induction starts from are a skilful selection from a mass of irrelevant material; but often they are ingenious *fictions* ('ideals' and abstractions), taken as working hypotheses, and (perhaps) growing into 'objective' facts by their successful use. At any rate, every *scientific* 'fact' has had a history which has a bearing on its logical value; it, too, must be regarded as the survivor in a struggle for existence.

Accordingly our two methods draw together. They betray their human origin and likeness. Neither will work without the other. They are plainly meant for each other. They interpenetrate and fuse.

It follows that the method of knowing is really *one*. We never rely entirely on the native powers of the mind, on the infallibility of our intuitions—in other words, on our native impudence. Nor do we ever merely abase ourselves before brute facts.

Our procedure is always more intelligent, critical, and self-respecting. We always experiment with selected demands and try them upon selected facts. We are always armed with a hypothesis, and usually have alternatives in mind when we question nature. The point of our question is always aimed at some subject of interest. Knowing is essentially a rational, purposive *activity*, and to leave out the teleological and the activity factor, as intellectualism does, alike in its sensationalist and in its rationalist forms, is a false abstraction and a fatal mistake.

It need not be denied that this procedure is risky. Inquiries inspired by desires may go astray. Our desires may prove too e1ective, and may blind us to factors in the total situation which should not be overlooked. But exhortations to be 'dispassionate' and 'disinterested', and solemn warnings of the type "Beware, young man, lest you find what you are looking for," are merely fatuous. For there is no other way of inquiring but that of asking the questions one is interested in getting answered, and there is no way of so emasculating the human intellect that it no longer feels any passion or

desire and grows *indifferent* to truth. The attitude described as 'dispassionate' inquiry is really one of high internal tension, and, when we look closely into it, the profession of dispassionate neutrality towards vital problems always turns out to be a cloak for a lurking interest that is ashamed to face the light of day.

The proper way to guard against the dangers of over-eagerness is not to force oneself into the attitude of a weather-cock and to turn in any direction winds of doctrine may chance to blow, but to allow experience of the working of our anticipations and ideas to determine their status. In other words, we should seek to verify our postulates and cultivate open-mindedness. In detail, the expedients by which we extricate ourselves from error and secure ourselves *are* the methods of the sciences.

§2. The Platonic Theory of Mathematics.

It would hardly be respectful, however, to adopt this attractive simplification of the problem of knowledge without due consideration of the claims made for an important group of sciences, the mathematical. Ever since the days of Plato, who was followed (with for our present purpose unessential variations) by Aristotle, the case of mathematics has seemed peculiar to philosophers. The mathematical were taken as the typical, nay, strictly as the only, sciences. They were thought to proceed by deduction from absolutely certain, a priori, and self-evident principles by cogent demonstrations, and to be wholly composed of necessary truths. Plato, though not Aristotle, further held that ultimately there was *only one* principle from which all scientific principles should be deducible (the Idea of Good) and that its nature was metaphysical. Thus philosophy was represented as the sole source of certainty and the foundation of all the sciences. It is no wonder that so flattering a theory proved popular among philosophers, and, thanks to Euclid, a devout Platonist, this theory of mathematical truth was also accepted by mathematicians for over 2000 years; still it remained a philosophic, and specifically a Platonic, theory. So we may describe as *Platonism* any theory of the sciences which regards them as dependent on principles or resting on 'presuppositions' which are self-evident or a priori, and as standing in need of a metaphysical deduction in order to become truly certain. The opposite view, that the sciences are independent sources of knowledge and their principles are successful postulates, while the function of metaphysics is to combine and harmonise their results and not to 'prove' them, may be called *empiricism*. It is suggested primarily by the natural sciences, but it has, of course, to explain the peculiarities of mathematics.

§3. The Conflict between the Platonic and the Empirical Explanation.

A clear-cut issue is thus before us. Are there *two* sorts of science—the a priori and the empirical—and is there no one scientific method, or is the Platonic theory of mathematics erroneous, and is scientific procedure in mathematics essentially the same as in the empirical sciences?

Inquiring into this dispute we may ask (1) whether Platonism gives an adequate explanation of the facts both theories recognise, (2) whether Platonism can dispose of the case for empiricism, (3) whether the converse is not true.

In answer to the first question we may note that, strictly speaking, the Platonic theory leaves as unexplained miracles both the initial discovery of scientific principles and the progress of the sciences. For if it is true, as Plato declares, that scientific principles are entirely dependent on the one metaphysical principle of the Good, it becomes inexplicable how they can be discovered, even as 'hypotheses', until the Good (on which they all depend) has been discovered, and how the sciences can progress when the Good has *not* been discovered. The actual progress of the sciences should, therefore, be impossible. Hence the history of science shows that there must have been some way of establishing scientific principles *otherwise* than by deduction from metaphysics, and the thought easily suggests itself that experience of their working is really the agency which confirms hypotheses and turns our guesses into 'principles'.

Thus a complete empirical explanation becomes quite thinkable, whereas a complete Platonism, denying all logical value to experience, remains incredible. Even a moderate Platonism remains a dualism, and is at a loss to explain how experience can co-operate with a priori truth in the formation of knowledge.

§4. The Empirical Explanation of Mathematical Truth.

On the other hand, empiricism has little difficulty nowadays in supplying a complete alternative to the Platonic theory and explaining how mathematical principles may be suggested, tested, and established, by experience.

(1) It can no longer be conceded that mathematical truth is *sui generis*, purely a priori, ultimate and unanalysable. Its necessity is merely that of inference: it flows from the definitions which lay down the rules for the game of mathematics. Euclid's postulate, the famous 'axiom of parallels', is merely a definition of Euclidean space. If we adopt this definition, that the internal angles of a triangle should equal two right angles is a necessity of

precisely the same sort as that a king should be mated if he has no valid move under the rules of chess. The definitions of mathematics look less arbitrary than those of chess, only because they have a more serious purpose; but both alike are suggested by experience.

(2) As the name continues to testify, 'geometry' once meant 'land-surveying', and had the utilitarian purpose of measuring and comparing areas, while arithmetic was a way of dealing with empirical things which allowed themselves to be treated as units for various purposes. Thus the function of mathematics was to calculate the shapes, sizes, motions, and behaviours of physical things. It greatly simplified their manipulation, although (as Plato perceived) no real ('sensible') thing is ever reducible to the mathematical thing which takes its place in our calculations.

(3) Mathematicians are now quite clear that mathematical definitions and postulates admit of many alternatives; the choice between them is determined by the purpose to which they are to minister. The assumptions of Euclidean geometry and common arithmetic are the simplest, and for most purposes the most convenient, of these alternatives, because the easiest to apply to the real. But it is meaningless to ask whether they are 'true' in any other sense, nor are they logically obligatory or superior to the other alternatives. They owe their privileged position and their identification with reality to their practical, not to their logical, superiority.

Thus the fundamental principles of mathematics are assimilated to hypotheses which have been verified, and differ from other hypotheses only in their antiquity and in the amount of verification they have received. They resemble hypotheses in six important respects.

(1) Like other hypotheses those of mathematics had not only to suggest themselves to the human mind and to issue from the human imagination, but also (2) to be stimulated by some empirical cue. Actually it was long experience of *things* in the physical world, which spontaneously grouped themselves into classes and were *almost* indifferent to the way they were moved about, which suggested to arithmetic the hypothesis of *units*, *entirely* alike, and utterly unaffected by any manipulations. So arithmetic became the science of what followed from postulating ideal units and counting them. The counting was an ideal process, and the units were idealisations which did not occur in reality; but the manipulations of arithmetic were applicable to the 'things' which had suggested them. Similarly spatiality is a constant attribute of things: they are extended and stable, and can be moved quite easily in physical space (if not too large); this empirical character was warrant enough for geometry to imagine an ideal space in which shape is conserved absolutely and the 'axiom of free mobility' holds without reservation. The axioms and postulates of Euclid, therefore, are imaginative constructions suggested by experience. They were originally

hypotheses; but they were a great success, and proved applicable to many aspects of physical reality. Thus (3) they were relevant to scientific problems and applicable to the real, which is perhaps the most valuable requirement in a good hypothesis. Yet (4) they were not, and were not intended to be, copies or replicas of sensible reality; for to insist on slavish imitation in a hypothesis is to clip the wings of the imagination and to rob it of its elevating power. It is enough that the real should show 'approximations' to the ideal qualities we demand in mathematics: it is idle to expect perfectly straight lines and plane surfaces to occur in a three-dimensional real which is the battleground of a variety of 'forces'. But though the real never attains to the ideal and is never mathematically 'exact', the latter may enable us to forecast the behaviour of the former; in which case it is said to be 'verified' by its usefulness. Thus (5) the principles of mathematics are verified by their use, like other truth-claims. Not (6), however, *absolutely*. They may become indispensable, practically certain, and psychologically unquestionable; but in theory, at least, it remains thinkable that better assumptions may be devised or that characteristics may be discovered in the real which lend themselves better to interpretation by non-Euclidean mathematics. In Einstein's physics this case may perhaps be said to have occurred; in any case it is clear that the usefulness of our mathematical principles was our reason for declaring them 'true'. We must, therefore, contend against Plato that here, too, the conclusions are more certain than the premisses from which they were deduced, and that it is the scientific success of the mathematical sciences which authenticates their principles, and not the infallibility of the principles which guarantees their success.

§5. The Task of the Sciences and of Philosophy.

Having thus vindicated the unity of scientific method, we may proceed to describe it. The sciences all arise out of the gradual articulation of the gigantic problem which the world presents to any intelligence that tries to live in it. In the beginning there was just the one problem of life, with philosophy as the attempt to solve it. But out of this situation grew the special sciences, practically independent and each concerned with one aspect of the whole treated in abstraction from the rest and developing its own assumptions, its own methods, and its own inquiries. This is the present situation; but in the end we may hope that there will be a sufficiency of sciences to suggest to a philosophy which undertakes to interpret and coordinate their answers an adequate answer to the total problem.

Thus, in a sense, Plato was right. The sciences did historically arise out of philosophy, if we assign this name to the inquiry into the whole

problem of life: but it is *not* true that they remain logically dependent on their genesis. On the contrary, philosophy in the end becomes dependent on the sciences, which, when they have done their work and achieved their several ends, always leave over a further problem—that of the combining together of the deliverances of the special sciences (together with any other relevant evidence from direct experience) into a single consistent and adequate interpretation of life. *This* sort of philosophy is not *pre-scientific*, like the first, but raises an ulterior question which the scientific specialist may ignore, and the scientific worker may do well to forget while at work, because it transcends the scientific standpoint, namely, the question of the vital significance of scientific results.

So scientific method in the strictest sense is limited at both ends. It starts from a pre-scientific situation which gives it its subject matter and initial problems. It ends with a final problem of the correlation, harmonisation, and valuation of scientific knowledge, which can neither be solved without scientific method nor yet by that alone.

Sciences, then, are to be understood as special methods for dealing with special problems, and essentially partial ways of concentrating upon the objects of interest and of inquiry they select from the vast and apparently unlimited *continuum* with which the real confronts us. This selection has at first a great air of randomness, and in its initial stages the growth of a science seems highly contingent. Historically speaking, it would seem, a scientific 'principle' may arise out of anything and come from anywhere. It may be suggested by anything. Sheer guesses, fantastic and false analogies, the intuitions of a poet, the revelations of a prophet, the intimations of a genius or a lunatic, may figure in its pedigree, and start it. Its genesis is a psychological, not a logical, process. It owes its whole logical value to what happens to it *after* it has been suggested. For when suggestions have been harnessed in the service of a science or a problem, they have to *work*, and cultivation tames their wildness. Those which remain incurably wild or idle are finally discarded; those which serve the purpose of the inquiry are trimmed and trained and verified continuously, until the most exacting sceptic can find no word to say against their respectability and 'self-evidence'.

Thus the logical value of scientific truth is a growth and an achievement: it is not the *premisses* of our science which are certain but the *conclusions*.

§6. The Logical Value of Incipient Sciences: (a) Principles.

Consequently, we can observe marked differences between the principles of an old and of an incipient science. The former (usually) present themselves as a single coherent system, unmoved by any breath of doubt, undistracted

by any hint of alternatives. The latter seem a battle-field of rival principles, a confused struggle of parties contending for their favourites, while even the most honest and scientific inquirers are at a loss to select the best among a number of tentative alternatives.

It is, however, clear that it is precisely these disputed principles which show us how a science is made and enlighten us about its logical structure. It has been a great mistake for logicians to take their illustrations of scientific knowing from established sciences. They solemnly inform the scientists that Queen Anne is dead, as it were, and bestow their *ex post facto* blessing on such procedures as have succeeded.

Thus the so-called logic of science has hitherto been written merely about discoveries already made, and *not* about their making, about which it is merely remarked that the process is not logical. As Prof. M. R. Cohen sarcastically says, "The Canons of Induction teach us how to discover the cause of typhoid or some other disease of which the cause is already known; they are silent about the cause of cancer and the methods by which it is to be investigated."[1] But how can the method of scientific inquiry possibly be illustrated by an account which expunges from the record all the risks, perplexities, hesitations, errors, and failures which beset the exploration of an actual problem? Thus is the *experimental* nature of thought hopelessly obscured. Our examples should be chosen from live questions still in dispute, in which the principles to use are still hypotheses, in which the postulates have not yet grown axiomatic, in which the 'facts' are still suspect and largely spurious. Hence there is much more logic to be learnt from psychology than from mechanics; and from psychical research, where all is doubtful, facts, principles, observations, analogies, experiments, and results, where prejudice, fraud, mendacity, self-deception, and hallucination are rampant, where hardly anyone is exempt from some noxious form of bias, than from a subject like mathematics, where emotional interest is at a minimum and everything appears to be settled—everything, at least, that is allowed to be mentioned in a text-book. Psychology and psychical research are logically so instructive, just because in them the battle of the principles has not been decided and questions of method are still being agitated. For it is in regions where we have slowly and painfully to feel our way that we become most acutely conscious of the need for care at every step we take, and are most willing to explore alternatives which may be improvements; where he sees a made road straight before him the logician ceases to be an explorer whose advice and observations may be of value to explorers, and is forced into the superfluous and ridiculous *rôle* of endorsing discoveries others have made and of logically 'demonstrating' what is already scientifically assured.

He also incapacitates himself for understanding the revolutions which

sometimes occur even in established sciences when the adoption of one of the suppressed and forgotten alternatives to the reigning principles suddenly becomes expedient. For he cannot explain how it is that though of the utmost 'theoretic' importance they avail so little to disturb the 'facts' of the science and the confidence with which it is regarded in 'practice'. He thinks that the Copernican revolution should have gone far to discredit astronomy, the Darwinian to discredit biology, the Einsteinian to discredit physics, the revulsion from Euclid to discredit mathematics. Instead of which all these sciences are more flourishing than ever. His whole difficulty arises out of his refusal to admit that principles are really selected for their empirical merits as working hypotheses. So he does not see that quite small improvements in the recognised 'facts' may entail a revolution in their 'explanation' and properly produce a radical transformation of the underlying 'principles'. This may, nevertheless, leave the main body of the science unshaken and intact, because the 'fundamental' principles were never more than convenient assumptions serving to hold together the admitted 'facts'. The real lesson of such occurrences is that experimentation with 'principles' is always in order, even though it is often too arduous to be prosecuted, and that their revision is always thinkable even though there is not often any need to undertake it. The logical outcome clearly is that the truth of scientific principles depends on the use made of them and on the success with which they have worked.

§7. (B) Facts.

Reflection on scientific method has been dominated and distorted by two delusions. The first, which has just been examined, is that we can start inquiry with assured principles which are self-evident and need no testing and may be taken for granted. The second, which is its twin, is that we can start from assured and solid 'facts', which impose themselves on us and speak for themselves. Both these delusions are corrected by the doctrine that initially we *experiment*, more or less wildly, alike with the 'principles' we postulate and with the 'facts' we recognise, that facts and principles are only factors in scientific method, remaining relative to each other and to the state of our knowledge, without ever arriving at real finality so long as knowledge grows. Both are rooted in a pre-scientific situation from which their problems spring, and are in truth to be understood and used as what the jargon of philosophy calls 'categories'. Thus it is out of its psychological urgency that the logical value of our knowledge grows.

In spite of this insight, however, we may readily admit that scientific inquiry often appears to start from 'facts', or what we are pleased to take as

'facts' for the purpose of the inquiry. Whether this is consciously realised or not, such facts are always problematic, always provisional, and always suffer transformation more or less as our knowledge grows. At the outset this factual subject-matter is plainly pre-scientific and of very inferior logical quality, and quite unfit to prove any principles 'valid', though it may suggest them to the eye of faith. This alone is enough to defeat the enterprise of inductive logic in extracting valid principles from facts, and justifies the veil of obscurity drawn over the origins of the sciences. It is wisdom and the instinct of self-respect that prompt the sciences to forget them. For only so is it possible to uphold the ideal of fact, stern and unbending, deaf to the allurements of theory, and adamant to the appeals of human emotion.

It is this ideal fact which is referred to when science is said to have unbounded respect for fact, to be devoted to its study, to lead to a loyal recognition of fact as the finest fruit of scientific training. Such fact is to be a pure *datum*, absolutely given and in no way *fabricated*. We are to have no say or choice about it, and to have done nothing to make it fact. Nothing *faked* is to count as *fact*.

But how does this ideal itself accord with the actual? The 'facts' the sciences have accepted at various stages of their career have been very different. At best they have been ephemeral, more often they have turned out fancies, fictions, fakes, fallacies, errors, superstitions, delusions—everything, in short, that is abhorrent to the scientific soul. From this condemnation only the reigning facts are exempt, to which we (rightly) pin our faith because they are the best we have; but in the light of their history must we not admit that sooner or later they, too, are fated to be superseded like the rest? And what is to be done about it?

The most obvious thing to do is to hush up the trouble, and to hope that it will not become public. The sciences, like the theologies, are human enough to try to conceal their difficulties from the uninitiated, and by a lavish indulgence in technical nomenclature they often succeed. Another favourite expedient is to institute a Draconic purge of 'facts', and to endeavour to find a fact which shall be, like Caesar's wife, above suspicion, so hard and solid that it can be trusted to stay fact, come what may.

So the whole pack of sciences start on the trail of absolute fact. But, alas! their history records no triumphs in this quest. However deeply they dig down they never seem to get to the bottom of any fact and can never produce an absolutely final account of it Our actual scientific facts are no more above suspicion than was Caesar's wife: they entertain relations with gross fictions as equivocal as Pompeia's were with Clodius.

§8. The Relativity of Fact.

It is high time, therefore, that logicians realised what the sciences are by now accustomed to confess, viz. that the actual scientific 'facts' are never absolute. They are always relative to the state of the science in which they figure, to the organs and methods by which they are discerned, to the conditions under which they are observed, to the instruments by which they are measured, to the theories in terms of which they are described, to the experiments from which they have resulted, to the history, bias, and aims of the science by which they are recognised. Hence if by 'facts' we mean the facts recognised at any time by any science, every science must admit that its 'facts' have undergone progressive transformation, and seem bound to change further as its knowledge grows: nor need it hesitate to admit that the facts as they appeared at the beginning and as they turn out to be at the end of an inquiry may often differ *toto caelo*.

In view of the logician's reluctance to face this relativity of 'fact', it may be expedient to give some illustrations. When the plain man asks the scientist the plain question, "What is the colour of blood?" he expects the answer "red." Does the scientist give this answer? No, he knows too much. So he answers: "If the blood is that of a mammal and not of a caterpillar, and is seen by an eye with normal colour-vision and in daylight, you may call it red." Again: "Is matter indestructible?"—"It would seem so, under terrestrial conditions, so far as our finest balances can tell us; but now that we can observe much minuter losses, we should add: 'Only if it does not happen to be radio-actively disintegrating.' And it is probable that the stars are radiating away their substance in the form of 'light', and quite plausible to hold that inside the stars matter is being annihilated all the time." "Is fever the disease I am suffering from?"—"Fever is a symptom of many diseases." "Have I 'typhoid' then, or 'dysentery'?"—"Both are names for the mischief made by half a dozen sorts of microbes." "Is 'witchcraft' a fact?"—"No, you must not call it that: it is no longer orthodox, though until two or three hundred years ago you might have been burnt for not doing so, even in the most civilised countries of Europe. You should now call it 'hysteria' or 'hypnotism', though in another two or three hundred years these terms are quite likely to sound as vague, absurd, and unscientific as 'witchcraft' now does to our medicine-men." "Does the sun attract all bodies in the solar system?"—"If they are not so small that light-pressure prevails over gravitation." "Do you and I see the same rainbow?"—"That depends on whether we can agree about what we call 'the same'." "Was Columbus the first European to discover America?"—"Unless you prefer to believe that Eric the Red got there some centuries before." "Who started the War?"—"Be careful to consider what and where you are before you answer,

for the accepted truth on this point is regional." "If history is never impartial and everywhere suspect as *une fable convenue*, may we appeal to psychology to yield us absolute facts?"—"Nay, nothing is more likely to disabuse you of the belief in absoluteness." "How so?"—"Why, it frequently fools the axioms of mathematics. If you move a pair of compasses across your skin, you feel it has one point or two according as you move over one part of the body or another. Again, arithmetically 0 + 0 always = 0, but two flies crawling over you unfelt while they are separate become psychologically perceptible when they crawl together. So when Euclid confidently argues that if A = B and B = C, A must equal C, psychology triumphantly retorts that in all magnitudes taken as equal by our senses or our instruments there may lurk unperceived differences which become apparent when A is directly compared with C, and hence A may nevertheless be larger than C."

"Lastly, am I in motion or at rest?"—"Wretch, you are plunging into a hornet's nest of problems. Have you never considered that the earth is revolving on its axis and circulating round the sun, which is travelling in space as part of a galactic star-cloud, and moving relatively to an unknown multitude of other systems? No absolute motion has yet been discovered and there are no means of detecting it, if it exists. Will you not, therefore, tell me relatively to what frame of reference you wish to know your motion or your rest? For only so has your question any meaning." "Well, then, can you tell me how many stars one can see simultaneously on a fine night?"—"You may think you see several hundreds at the same time; but you really see them as they *were* when their light started on its journey to your eye. So you see them all at *different* times, the moon as it was 1? seconds ago, the sun as it was 8 minutes ago, a distant star as it was thousands of years ago. 'Simultaneous' has become an ambiguous word, and time as relative and local as motion. The principle of Relativity is a gallant attempt by physics to explore the far-reaching paradoxes which this fact entails!"

We may safely conclude, therefore, that for scientific method 'facts' are relative to the 'theories' that deal with them, to the laws which explain them, and to the general state of knowledge and of the society which recognises them. It is vain to seek for a 'fact' in which no theory is lurking in order to build a science on a fixed foundation. But neither is there any 'theory' which is doomed to remain such and may not hope to rise presently to the rank of 'fact'. All the conceptions used in scientific method get their value from their use as instruments of knowing.

§9. (c) The Organic Apparatus a Presupposition of Scientific Method.

The same function may be claimed also for a number of other presuppositions of actual knowing which are often overlooked. Thus it is to the organic apparatus of the senses and of the bodily structures generally that we are indebted for our primary *data*. It is indispensable and invaluable, because we could hardly live without trusting it. Yet the sciences speedily discover that it is by no means perfect and infallible. Our senses are strictly limited in their range and highly selective, responding only to a minute fraction of the stimuli they might notice.

For example, this is how they treat vibrations. They are noticed as 'noises' if they are very slow, as 'tones' if they are faster than 32 per second, and as the rate of vibration increases they get higher and shriller up to about 40,000 per second. After that silence: the ear shuts up shop, and will hear no more of vibrations. When, however, certain other processes, now denominated 'ether-waves', begin to hum at the rate of about 390,000,000,000,000 per second, the eye wakes up. It sees 'red'. It goes on seeing all the colours of the spectrum up to about 770 billions at the violet end. But at either end of the visible spectrum there are known to be further vibrations of what is called 'invisible light', because it is refracted and reflected and generally behaves like light. It is light in all respects, save that the eye does not respond to it. The 'infra-red' rays are, however, perceived by the skin as 'heat', though it wholly boycotts the blue end of the spectrum which, therefore, yields 'cold' light without heat, while the 'ultra-violet' produce chemical effects which are salutary or injurious to the human body ('tan', vitamin D). Indirectly we have obtained cognisance of vibrations with frequencies as slow as 12? billions per second and as fast as 100,000,000 billions ('cosmic rays'), so that, if we take the visible spectrum as an octave, there are 5 octaves below and 18 above the limits of vision. Clearly, then, our organic recognition of vibrations is very discontinuous; we have no organs for the direct perception of most of them. Nor are we sensitive to the ultimate fact of physics, 'electricity', or the electrification of bodies as such, which is presumably why we were so much slower in utilising this great force in nature than the electric ray and the electric eel.

Now the selectiveness of our organs seems to be merely capricious and accidental, till we reflect that it is biological and adaptive. Our eyes are adjusted to the sort and intensity of light which the sun pours upon the earth, and in general, in so far as our organs are shaped by the life we have led and represent adaptations to modes of life that were chosen—or at any rate preferred to extinction—by our ancestors, it may even be said that their selectiveness is volitional. Man's organs, like those of other living beings,

are relative to his mode of life. He has not the eye of the eagle and the keen scent of the sleuth hound or of the blue-bottle fly, because his ancestors never needed to develop eagle eyes and blue-bottle noses. Their habits were arboreal; and so we have prehensile thumbs, and an eye that is a good judge of moderate distances and an aid in hurling missiles.

But man's supreme organ is the brain, the seat and instrument of his intelligence, and the philosophic worship of 'reason' is merely a misconstruction of this vital biological fact. As we saw in Chap. X, §2-4, man is emphatically the animal which lives by his brains, and, though civilised life has fostered many ways of sucking those of others, the ultimate basis of progress is destroyed if brain-development is arrested. It is also obvious that the direct dependence of our factual *data* on our organism and their ulterior dependence on our mode of life form an insuperable bar to the belief that 'pure' theoretic knowledge of total reality is the end for which we are constructed and what our organism is fitted to achieve.

§10. The Fallibility of Our Organs and the Use of Instruments.

Our senses are not only selective, but also fallible. Not only are they easy to deceive—a fact which is the basis of the art of conjuring—but they spontaneously show us a whole host of illusions—straight sticks bent in water, parallel rails converging in the distance, and the like. All, moreover, are subject to hallucination, which is often hard to detect. It is no wonder, therefore, that, from the early days of Plato and Democritus, philosophers, rationalists and empiricists alike have deplored their deceptiveness. Nor did the scientists deny it: only, instead of merely bewailing it, they sought for remedies that might protect us against the cheats of the senses.

For this purpose they invented a great variety of instruments, which enormously extended the range and accuracy of our senses and the exactness of our observations. Metaphorically, as well as literally, we are now armed with spectacles in our contemplation of the real. This use of instruments is the great difference between ancient and modern science.

But instruments do not fundamentally alter the problem of knowledge. They do not absolutely guarantee either exactness or immunity from error. Thus (*a*) while it is true that the more exact we make our instruments the more minute grow the quantities they enable us to measure, yet the more numerous also grow the sources of error we must guard against, because to a fine measurement errors become relevant which were not appreciable in a rough one. Thus the curvature of the earth's surface does not matter when one is marking out a tennis court; but it becomes relevant when one is measuring the base line for a trigonometrical survey.

(*b*) Every instrument has limits to its exactness, and these are not merely practical. They may be inherent in the theoretic structure of the instrument. Thus no microscope could conceivably render visible structures no larger than the wave-length of light, nor is it probable that any balance will ever measure the loss radio-active substances undergo by emitting α particles, even though we (by other methods) actually count the number expelled per second, and can thus show how rough and fallacious were the old proofs of the indestructibility of matter.

(*c*) When we want accurate observation we have soon to recognise that the conditions are so complex and so variable that anything may upset them. The least variation in temperature or atmospheric pressure, for example, produces variations that vitiate an experiment and defeat our expectations of uniformity. Hence we find that no two observations ever agree exactly. If they did we should suspect that they had been 'faked', like two completely concordant tales by supposedly independent witnesses to a complicated transaction. The vaunted regularity of nature is in a sense always faked. It is a regularity not in the crude facts of observation but in an artificial extract from them, a formula derived by taking the mean of a number of observations, after excluding any which for any reason are considered anomalous and 'bad', duly *weighting* the remainder, allowing for the probable error both of the observations and of their mean, and finally imposing on them some 'law' to which they can plausibly be held to conform. The actual observations, even so, will probably be compatible with a number of 'laws', and the one chosen is always preferred for reasons which may be sound but are pretty sure to lie beyond the observed facts.

(*d*) However fine we make our instruments and however carefully we observe and correct our observations, we come sooner or later to a point at which we rely once more on the observer's senses. For he has to read off the record of his instrument. Now, every observer has his own idiosyncrasies about this, his own rate and mode of recording, and organs with a constitution and sensitiveness peculiar to himself. Any divergence or anomaly in these respects will entail personal errors; or will at least involve a *personal equation* which will enter into all his measurements. It can be ascertained, not indeed absolutely but relatively to the *personal equation* of another observer; but the *dictum* of Protagoras remains fully true. Not only is man the measure of whatever objects he studies, but in the last resort every man is the measure of what is real for him.

§11. 'Memory' as a Presupposition of Fact.

Besides the sense-organs other constituents of our complex nature enter into the 'facts' Scientific Method deals with. Thus *memory* is as indispen-

sable a presupposition of knowledge as sense-perception: without it mind would be narrowed down to the pin-point impression of a moment. We could make no plans and forecast no future, having no record of the past. A certain *retentiveness*, therefore, is a postulate of effective knowing. But so is a certain capacity for *forgetting*. A literally photographic and indelible memory would be an intolerable burden, and by retaining the past too vividly would paralyse action in the present. We, therefore, neither wish nor need to remember everything, and, as Prof. T. H. Pear well says, "a good memory should be serviceably selective . . . and the art of forgetting is but the inner aspect of the art of remembering."[2]

Being thus selective, memory can hardly lay claim to infallibility; but failure to remember all that is relevant to a present situation is far from being the only 'trick' it plays upon us. It is apt to remember what is irrelevant and inopportune: it is often almost as *creative* as imagination, and 'remembers' what never happened at all. And it habitually enters into present perception and plays a great part in shaping it: all we perceive is perceived in the light of a past more or less consciously remembered; which is why no two minds perceive quite alike, and why there is a historical side to every fact recorded in every science, though the natural sciences often find it convenient to forget this (Chap. XVIII, §10). This influence of the past on the present, to which Mr Russell has given the name of 'mnemic causation', is usually beneficial, because it enables us to bring old knowledge to bear on a new situation, but there is always a risk that it may take the form of distorting preconceptions.

A further reason why memory cannot unreservedly be trusted is that what goes under the name is very ambiguous and really complex. At least five distinguishable processes or acts are comprised under the name of 'memory'. (1) There is, first, the retentiveness, which makes *living* matter able somehow to retain past impressions and so teachable. This is the only sense of 'memory' which lends itself to associationist and materialist interpretation, for it may (at a pinch) be ascribed to a physiological alteration in brain tissue which results from its functioning. (2) There is next the judgment of memory, which arranges the raw material provided by memory in the first sense, and refers the surviving traces of former experiences ('images' and what not) to a personal time-order and objectively *dates* them. (3) There is the more or less obscure, but purposive, process, which accounts for the general relevance to the mind's actual situation of the memories which come up; this process is plainly not random, and without it memory might easily be useless or worse, because *irrelevant* recrudescences of the past might often be fatal to present action. If the process of 'remembering' were really mechanical, we should expect our memories to crop up quite at random without any special reference or rel-

evance to the actual situation; the fact, therefore, that (on the whole) they do not reveals its purposive and teleological nature. (4) This comes out still more strongly in active *recollecting*, which is conscious striving to bring about the relevance of our memories to a present we desire to act on. (5) There is, lastly, the postulate of the trustworthiness of memory. Now this is assuredly a fundamental postulate, for, if we could not trust our memory, knowledge would be restricted to judgments about present experience. Still this postulate is not wholly true; our memory may play us false and its products are not always trustworthy. But being a genuine and indispensable postulate it is not dropped when it is found to be fallible; so long as it is true enough to be useful we try to guard ourselves against its tricks (as in the case of the illusions and hallucinations of the senses) by elaborating substitutes and checks and tests of its veracity.

§12. The Personal Equation and the Self.

The fact that for good or ill every mind suffers from 'mnemic causation', i.e. perceives its present in the light of its past, renders it impossible really to eliminate the personal equation in any knowledge. We may, indeed, pretend we have done so, and flatter ourselves that we have guarded against the worst deceptions of personal abnormality, but do so only by accepting some one else's perceptions (much as a colour-blind person may concede the 'normality' of *superior* powers of colour discrimination), and this only substitutes personal equations which yield *better* standards for worse. It is also true that the sciences often talk as if personal equations could be got rid of altogether, and as if they aimed at purely objective and completely depersonalised knowledge. But this notion is a pure abstraction, and actually a fiction. It does not actually occur, and cannot be made a condition of the possibility of knowledge. In actual practice the sciences do the best they can with the minds they get, and take their standards from those whose workings seem most valuable.

So the *data* of knowledge are never really depersonalised. Nor is complete 'objectivity' reached. Impersonal objectivity remains a *fiction*; the objective world remains relative to a subject in the background, however much he strives to efface himself. There is no thought without a thinker, no observation without an observer, not even a dream without a dreamer, and no object without a subject. To this extent at least philosophy is justified in criticising the fictions of science.

But it cannot be said that philosophy has made a success of explaining this ineradicable relation of subject and object, and of describing the nature of the self or soul in intelligible terms. Western philosophy never even discovered the fundamental problem of the self until Descartes. Even

then the self was valued merely as a specific against philosophic doubt, and described metaphysically as 'spiritual substance'.

Now this description has its roots in very primitive thinking. For man at first spontaneously conceived himself on the analogy of the natural things it was so vitally necessary for him to know and control. But in forming the notion of 'thing' he had implicitly projected his own unanalysed self into nature. It was the experience of his self-identity that suggested the existence of 'things' in nature that could change and yet remain 'the same', and thus led to the recognition of 'substances' under lying the changing 'appearances'. For only his own inner life could yield man a direct model for the notion of persistence through change. 'Soul-substance', therefore, is the product of a double process of interpretation by analogy; first the attribution of a persisting self-like support to the phenomena of nature, and then the assimilation of the self to the supposed substances underneath the external world, the two together constituting primitive animism. So the self became a 'soul', easily identifiable with the life and the breath, a thing-like entity among other things, which though normally resident within the body was in principle detachable, and could wander forth in sleep for perilous adventures in all the realms of being. In view, more over, of the manifold risks of mortal life it seemed prudent to cast about for a securer receptacle than the body for the precious soul, and so the wily medicine-man or magician frequently found it better to keep his soul (in some durable shape) safely locked up in a secret place, and then felt sure that nothing could endanger his life. Of course, if some enemy got hold, say, of the crow that was the sorcerer's soul, and wrung its neck, the sorcerer would incontinently fall down dead. This ancient theory of the soul remains familiar to readers of fairy tales.

It had, however, considerable drawbacks. Quite apart from the confusion of internal and external, of psychical and physical, which it involved, it did not really explain the soul's relations to its conscious states, and what was meant by its 'having' them. By conceiving the soul merely as a *thing*, and therefore an *object*, it disabled it from becoming a *subject*, and so from observing and contemplating itself. Nor could it explain how the soul's changing states were attached to its unchanging substance and could fuse with it into a unitary being. When a change occurred in a soul; did the whole soul change or only part, and, if so, was there no change in the relation between the changing part and the unchanging 'substance'? The problem of unity and plurality in the soul, of the relation of the parts ('faculties', 'elements', etc.) of the soul to the central unity was similarly insoluble, and in general the soul-substance theory could neither account for the epistemological relation of subject and object, nor yet justify the common-sense belief in the practical unity of the personality.

It thus challenged the attack of an 'analysis' which triumphantly demanded to be shown an unchanging item in the soul, and, when it could not be produced, proceeded to dissolve the mind into a series of 'impressions', 'ideas', or 'events' (Hume, J. S. Mill, Bertrand Russell, etc.). But this analysis also was totally incapable of explaining how this series of events could be compacted together into a mind that is *aware* of its history and serial nature.

The epistemological problem of the self was handed on unsolved to the Critical philosophy of Kant. Kant *more suo* declared its solution to lie in an a priori necessity of recognising a synthetic principle, which he called the Transcendental Ego or Synthetic Unity of Apperception. This did not aspire to be a substantial soul, but it was the subject presupposed in the knowing of every object, and nothing knowable could free itself from its grip. This correlation of subject and object is usually taken to solve the epistemological problem of how the mind can know its objects, and also as a proof of idealism.

Yet it was very far from being satisfactory in either respect. Though it got analytic idealism out of the Humian *impasse* and provided his dissected objects with a subject, it failed to establish any real priority of mind. It left the subject as dependent on the object as the latter was on it. Nor did it really provide common sense with its chief *desiderata*, with a self that was a unity of subject and object and that *really belonged* to the individual states of consciousness which it unified. For to exemplify the Transcendental Ego as an epistemological function was *not* to have a self of one's own that could possess and cherish its experiences. There was nothing in Kant's argument to prevent a single Ego from supplying the needs of all the minds in existence, and Fichte could promptly turn the Transcendental into a metaphysical and Absolute Ego, indistinguishable from the *Atman* of Indian philosophy, and this was not in the least what the ordinary man aspired to or supposed himself to be.

William James took a decisive step in advance by emending the psychological description of the self which both Hume and Kant had mistakenly presupposed. He gave up the fiction of the discontinuous states of consciousness and described the mind as a *continuum* or 'stream'. He distinguished also between the self-as-object or the '*Me*' and the self-as-subject or the '*I*', and included in his psychological description the fact that the whole stream was always *owned* by an *I*. But, presumably, in order to emphasise his correction of the Humian 'series', he described the *I* as a *succession of I's* each handing on its possessions to the next, and passing into the *Me* (in retrospect) as it passed away. And he made no attempt explicitly to elucidate the unity of the *I* and the *Me*.

Nevertheless James's psychology implicitly contains the answer to this final puzzle. We have merely to read his account of the self in the light of his

distinction between the focus and the fringe of consciousness. The contents in the focus of the mind's attention are always surrounded by a fringe of objects not attended to, which fades gradually into the impenetrable gloom of the background. The objects 'before the mind', i.e. attended to, are exquisitely unstable and continuously changing; but the background is ever felt to be present, and is never seen to change. *Ex hyp*. it could not be, for if we tried to observe its contents, to see whether they changed, they would at once come out of the background and into the focus. Our inference, however, that the background is always the same, and never changes, may well be an illusion. It takes unobservable change as absence of change, and this we may see to be a mistake, if we consider all that happens in a shifting of attention. Not only do new objects come before the mind, but the old ones disappear. Where do they go? Where can they go but into the background, into the unconscious depths of the soul? But there they are not lost; they lie hid, but may be summoned forth again when needed, and 're-collected'.

It is thus the nature of the mind or soul to exhibit a continual ebb and flow between the contents which are actually before the mind and those which remain potential in its unconscious recesses. They cannot all be actualised together; we cannot express all that we are in the fleeting consciousness of any moment, and we realise ourselves in a *succession* of states. It is this fact which gives rise to the division into the *I* and the *Me*, and produces the illusion of an unchanging *I*, inactively watching and indifferently sustaining all that happens in the soul. But really the *I* and the *Me* are *one*: they are consubstantial and share in the same contents and *together* constitute the soul. Both moreover change, though the changes in the *Me* are observable and those in the *I* are only inferred. Further, each *Me* properly belongs to its *I*, and each *I* is the *I* of a particular *Me*; each soul is completely individual throughout. Thus the *I* is, as Rutgers Marshall declared, simply "the field of inattention."[3] The total self divides into the *I* and the *Me* merely because its life is manifested as a succession in time which is at no moment expressive of *all* its powers. But could it transcend this restriction, the dark inscrutable background which envelops our actual consciousness would evaporate; it would be taken up into the light, and would cease to be a torment. We could then identify ourselves wholly with what we actually were.[4]

Our solution of the problem of the Self clearly has important logical consequences. If the self which is the presupposition of all knowing is an individual self, and not a transcendental function or a metaphysical Absolute, logic should clearly expect psychological differences in the thinking of individual knowers, and should be prepared to consider how they may best be discounted or brought into agreement. It will no longer do to take for granted the facile assumption that all minds think alike and that the introspections of a single philosopher can legislate for all the

realms of knowledge. It will be necessary to recognise that all knowers are subject to bias, not only personal but also social and political, and that all these forms of bias must be evaluated in each case. For example, the conflict between the conservative and the innovating attitude enters into every problem of scientific inquiry. It is evident, also, that our conclusion will be a valuable and indeed decisive reinforcement of our earlier contentions (Chap. IV) about the personal character of meaning and the purposiveness of all knowing. A voluntarist logic, therefore, will welcome the opportunity of explaining why it is that differences of opinion are so persistent and that truth so extensively and so long remains a partisan affair. This is particularly marked in the beginnings of scientific inquiry, because we begin with little or no experience of the consequences of the sorts of bias and of the various attitudes towards the object of inquiry, and therefore cannot evaluate them. But, as has been remarked, the initial stages of a science are logically the most instructive, because they generate most doubt and create a tension in the mind. When a science has succeeded and attained to undisputed truth it asserts its independence of its makers, and generates illusions about the nature and value of its methods, while the fact that there is no longer any dispute about its results causes our logical vigilance to relax.

§13. The Power of Words.

We have by no means exhausted the list of the equipment or luggage which the scientific knower carries with him on all his explorations, whether he knows it or not. His personality represents a highly individual and never completely analysable factor; his language, on the other hand, is his means of communicating with other minds. Properly used, it is a precious assurance of social support; but it is also what drags him down to the common level, and veils his individual vision. It is was *uns alle bändigt das Gemeine*. If he can master it and use it skilfully, he can convey his meanings and communicate his discoveries; if he fails, he is lost and starves in a desert of sterile verbiage. So, sooner or later, he discovers that *les paroles sont faites pour cacher nos pensées*; the great instrument of expression can be made to conceal our thoughts, or, not infrequently, their absence.

It has taken science weary ages to see through the Great Illusion woven by words and to learn that verbal reasoning is no proof of anything, and even now philosophy hates to admit that it cannot stand against experience. But verbal reasoning can deal only with the meaning of the *words* it uses, and this could embody no knowledge but that which their inventors had: it has no power over the future, and cannot predict it; any new discovery may confute it and force the scientific knower either to scrap his old

words or to transform their meaning by using them in new senses. Actually he does *both*, and which of these policies he adopts appears to be very much a matter of chance. But both have drawbacks. If he keeps on coining new words to express his discoveries, he becomes a specialist whom only his equals (if he has any) can understand: if he develops the meanings of old words, he may cause confusion, and will certainly incur the charge of misusing words and destroying established meanings. All verbalists will condemn his thought as self-contradictory and incoherent, and will refuse to listen to novelties that find expression in such improper terms.

From Formal Logic, in particular, he must expect no mercy. For the *fixity* of verbal meaning is one of its fundamental (though unavowed) assumptions. It continues to swear by the 'Law of Identity', without investigating what it can mean. Actually it relies throughout on the identity of terms which are taken to 'mean the same' in different contexts in order to justify inference from one case to another. If this verbal identity of two cases of what is called 'the same' is not accepted as an unquestionable guarantee of validity, the whole fabric of Formal demonstration crumbles.

But modern science finds it growing harder and harder to believe that reality can be controlled so easily, by just laying down the meanings of words, out of the plenitude of our power over them and the fullness of our ignorance of nature. So to a typical 'ontological' proof (by pure logic) that the world is one because there can only be one 'universe' which (by definition) is the totality of reality, it is tempting to retort, "But how do you know that anything conforms to your definition? I admit that verbally 'universe' implies unity, but how do you know that it *applies* to the real? Or otherwise, that you are *right* in conceiving the real as a world or totality?"

Words, therefore, are not instruments of prediction or control, and the attempt to use them as such is not science but magic. It is the fatal superstition which vitiates all a priori reasoning. Scientifically any *application* of the 'law of identity' runs a risk of refutation by experience. The 'law' is not a fact nor a controller of fact; it is a methodological assumption, a fiction, or at best a postulate. Nothing, not even a self, remains absolutely unchanged for two moments together; so the *logical* identity of two 'cases' of A—a^1 and a^2—is always a fiction. It is often a useful fiction, but it can only mean that *for our present purpose* the differences shall be taken as irrelevant. But this postulate may, of course, always be disputed, whenever the 'law' is applied. So the indisputability of *A is A* subsists only so long as no attempt is made to use it.

The Law of Contradiction is afflicted with a similar fatuity. It says 'nothing can both be and not be'. But anything that can change or have a plurality of relations defies it. It can both be and not be with the utmost ease. It is at one time, and not at another. Or in one respect, and not in

another. Or in one place, and not in another. Or for one purpose, and not for another. Or in one context, and not in another. If we try to equip our statement of the Law of Contradiction with all the reservations required for its (verbally) valid application, we soon find that there is no end to them, and that we are chopping at a Hydra's heads.

There is, moreover, a fatal objection to deciding scientific questions a priori by thus applying 'laws of thought'. In all *growing* knowledge the meanings of the words which serve as its vehicles are developing, and these new developments are sure, sooner or later, to diverge so far from the original meanings that they come into logical conflict with the latter. Whereupon those who cling to the older meanings can cry out upon the 'contradictions' and impossibilities of the subject and take them as proofs of falsity. But they may be only verbal and incidental to the growth of knowledge. The sciences do not shrink from them. They freely recognise 'atoms' that are no longer indivisible, 'species' that are no longer immutable, 'light' that has become invisible: they operate with 'liquid crystals', 'solid solutions', and 'unconscious' perceptions and mental processes. All they care about is to get conceptions adequate to the facts, whatever verbal paradoxes they may involve. It is quite legitimate, therefore, to speak of the 'life' of an atom, a mine, or a ship, if the analogies implied therein are found to hold.

Thus the charge of self-contradiction has no terrors for a scientific reasoning that is actively engaged upon facts. It is fatal to dialectical reasoning, because this has accepted the Formal convention of the Fixity of Terms and become essentially *verbal*. It cannot, therefore, defy the verbal conventions expressed in the 'laws of thought'. It has thereby restricted itself to extracting the verbal implications which lurk in the meanings of words, and of course hold only so long as these conventions are accepted. But actually there is always an appeal from the completest verbal contradiction to the facts of the case. So a formal contradiction justifies, not an inference to the falsity of the (apparently) self-contradictory assertion, but merely the question—*What do you mean?* The man who uses contradictory language appears to have broken the conventions for communicating meaning; but as presumably he meant something, he should be given an opportunity of explaining himself. And the question put to him is the sovran specific for clearing up difficulties and misunderstandings, clearing away obscurity and bombast, cutting short dialectics and bringing to light the real issue. It is the chief protection of the critical inquirer against the snares lurking in the verbal apparatus which he cannot but take over and use.[5]

§14. The Power of Common-Sense Realism.

But this is not all. He not only takes over a language and a formal logic (which is language in disguise), but a whole metaphysic entrenched in the forms of language. It may be called common-sense realism, and its leading conceptions claim to be, at one and the same time, ultimate realities, logical categories, and grammatical forms. So it believes that the world is composed of a plurality of *things* (substances, substantives) and *persons* (subjects, pronouns), existing in their own right and having *qualities* (adjectives) and *relations* with each other, acting and being acted upon (*verbs*, active, passive, intransitive, etc.) according to causal and teleological laws (which are developed out of our experience of compulsion and willing). As a view of the world this metaphysic has two great advantages.

(1) It is the outcome of man's experience of the world and of his practical dealings with reality. It has, therefore, pragmatic authority, and is not merely an untried theoretical construction. To a large extent it is both a *datum*, from which more refined theories have to start, and which they have to explain, a criterion which can be used to test them, and the destination to which they must return.

(2) It is much more deeply rooted than any competing theory. It is spontaneously accepted and really believed by all, even when they play with other theories; it is, therefore, acted on. Consequently it provides the common ground by reference to which all other opinions can be compared. However zealous they may be to transcend it, they will all tend to relapse into common-sense realism at some point, or appeal to it for practical support.

In spite of this dependence on common sense, however, it must be confessed that the sciences modify its beliefs very freely, and often depart from it very widely—quite as far as the wildest metaphysics. The man in the street, for example, would hardly nowadays feel much at home with the ultimate reals and favourite conceptions of modern physics. Needless to say, good scientific reasons are always to be given for such departures from common sense.

Yet in the end the sciences have always to *return to* common sense. They have to vindicate the value of their hypotheses and fictions by their power to transfigure the crude reals of immediate experience, to predict its happenings, and to enable us to control it. For otherwise we get no assurance that the conceptions which our science uses are more than *entia rationis*, calculating counters by which the course of events is predicted, without revealing the inner nature of the real.

Thus the relation of science to common sense involves a two-fold movement: there is first an advance from the common world of common

sense to the worlds of the various sciences, which are deemed more real because they are more potent. But, in using the power over appearances which knowledge of scientific reality yields as a test of the truth of our scientific conceptions, we implicitly commit ourselves to the superior reality of the world of common sense, and affirm the supremacy of life over science in the last resort.

Moreover, it would be well never to forget that behind all our cognitive operations lie vast masses of crude experience out of which the world of common sense has itself been extracted as a practically serviceable selection and interpretation. In this murky region, which only the science of psychology ventures to approach, the conventions which underlie the common world of common sense are not yet established; the line has still to be drawn between objective and subjective, real and apparent, perception and hallucination, dream and reality, and the unity of the universe has not yet been adopted as a dogma and enforced by the exclusion of all facts that will not fit into it. Crude experience, therefore, forms a turbulent chaos from which our instinctive love of order shrinks; but a scientific logic should remind us that it also serves as a great reservoir of possibilities to which we may revert when, as sometimes happens, our working hypotheses have broken down and stand in need of a radical reconstruction.

§15. The Interplay of 'Fact' and 'Hypothesis' in Scientific Method.

We have seen in the last chapter that scientific procedure is by no means devoid of presuppositions. Scientific method does not start with a clean slate: it inscribes its findings on the much-furrowed wax of a palimpsest. Speaking roughly and in general terms, we may no doubt say that its operations are always reducible to correlations of 'facts' with 'hypotheses'; both terms, however, must be taken very broadly. Under the former we are to understand all apparent facts arrived at in the various and complex ways studied in the last chapter, all *data*, whether given historically or only assumed, all starting-points and stepping-stones that are used to pave the way to discovery. Now it is clear that most of this material has no pretensions to be *final* fact; it is dubious and provisional, and that it is fact at all is plainly a hypothesis. But this does not matter; for what matters is the logical character, not of the initial material, but of the end-product fabricated out of it. The business of Scientific Method with 'facts' is to turn appearances and allegations into the solid structure of a science.

Again, under 'hypothesis' we should embrace interpretations, theories, principles, analogies, postulates, and demands—anything, in short, which

can serve to string 'facts' together and to set them in order. Actually these terms differ rather in the directness with which they point to the emotional and volitional factors lurking beneath the surface of the cognitive process than in the cognitive function they are used to describe. In actual use they all serve as *rules of inference*, as *instruments* for working upon the raw material which is 'given', and as *vehicles* for scientific progress. They are all simply 'transport', adopted in view of the nature of the country it is desired to explore, in the hope that they will prove suitable. If not, they should be scrapped at once, as also if they can at any stage be improved upon; for they have no inherent logical status, but are just *methods* for use, to be held experimentally.

In their functioning, moreover, they, as also the given they operate on, may undergo any amount and sort of transformation that may seem to be expedient or requisite. Thus 'theories' may turn into 'facts', and 'facts' be discredited as false analogies and interpretations and the inferences of childish superstition.

§16. Scientific Method Universally Applicable.

The application of Scientific Method is universal. Despite the attempts of certain scientists to represent it as something exclusive and mysterious, there is nothing too lowly, repulsive, obscure, contentious, or deceptive to come within its scope. Neither is there anything too 'sacred', which generally means a fear that the things so denominated cannot bear investigation.[6] Scientific Method is the *only* genuine method of knowing, and will tackle anything knowable. It despises no problem and prejudges no question. It is willing to begin operations on any material it can get, however insecure, dubious, or dull, and to pry into lingering pseudo-sciences like astrology, heraldry, and Formal Logic as zealously as into the most flourishing and progressive sciences. For it has confidence enough in itself to shrink from nothing, and to be capable of *learning* from anything.

Hence the *data* from which Scientific Method starts are neither absolutely 'fact' nor even absolutely 'given'. They are whatever is *taken as fact* for the purpose of the inquiry, and would better be called *sumpta* than *data*. Nor is any inquiry made, in a particular inquiry, as to how they have come to be such *data*. This question does not arise, precisely because they have been accepted, however tentatively, and because any mistakes that have been made in the initial selection of *data* can be put right in the progress of the inquiry. If any doubt arises, it can be inquired into; if any mistake is detected, it can be repudiated or corrected. Science has no superstitious reverence for any one's *data* as such, not even for its own; it feels free to select,

reject, and remodel them as suits its purpose and that of the hypotheses and fictions it employs; it retains also the right to go back upon and to revise any conclusion it has reached. For the logical value of its conclusions and of its procedure is in no wise dependent on the *data* it started from: it depends rather on the advance made after *leaving* the starting-point.

All this, however, is not to say that an application of Scientific Method is guaranteed to carry every inquiry to a *successful* issue. Its results may be negative. It may succeed in showing only that the apparently bad material it started with really is bad, and that nothing can be made of it. In many cases this may be a valuable result. In others, in which the alleged facts are very important and interesting, the conclusion drawn may be merely that the method of investigation actually employed should be altered and improved. In neither case, however, is there any ground for intolerance. Those who are not satisfied with any verdict of science, whether positive or negative, should always be left free to work for its revision, if they think it worth their while and they see any prospect of success. For no scientific truth is ever absolute; and proof, verification, and disproof remain intrinsically questions of more or less, and the answers to them appeal variously to different minds. It is far more important not to block any possible avenue to further truth than to obtain a mechanical and official uniformity of beliefs which is not expressive of the psychological facts of human nature.[7]

§17. Observation and Experiment: Defined.

Observation and Experiment are the traditional terms for describing the scientific treatment of *data*. They denominate vitally important attitudes of mind which dovetail into each other and co-operate closely; but for this very reason it is desirable to distinguish clearly the functions of each.

Regarded psychologically as an attitude of mind, observation is just *watching*, not however with any suggestion of passivity, idleness, or indifference, but an attitude of active *watchfulness*, sustained by a *will to watch* and to delay action. As was suggested in Chap. X, §6, the capacity for such watching was probably developed in man by his life as a hunter when stalking big game; he then had to learn, as his first lesson in self-control, the need for waiting for his opportunity and inhibiting his impulse to react thoughtlessly to the presence of his prey. It need not be doubted that such self-control was a difficult achievement, and long involved a high degree of internal tension and excitement, essentially akin to that which we may still observe in a pointing dog or a quivering cat about to pounce.[8] Calm and 'disinterested' observation is a 'sublimation' of such activities, and does not annul their primal nature.

Compared with Observation, Experiment is an *intervention*, and expresses a will to interfere with the course of happening. It means an attempt to remould the actual nearer to the heart's desire. But, of course, it does not *exclude* Observation, but rather presupposes it. The outcome also of the experiment must be observed, and any attempt to 'fake' the results of experiment defeats its purpose.

Conversely we must recognise an experimental factor in Observation. The concentration of attention in scientific observation is selective, and therefore experimental, and the more intently and selectively we observe the more we depart from the casual and random observation we began with and change the conditions. Moreover, as an inquiry progresses, we learn more and more precisely where to look, we use more and more delicate instruments, and observe more minutely: the eye of the trained observer has much deeper insight. If, then, to alter the given conditions is the essence of Experiment, it is clear that observation grows more and more experimental as a science grows.

The antithesis, therefore, between Observation and Experiment must not be taken as absolute. It is not true that the former is passive, the latter active. Both are active, because in ultimate analysis all life is an activity expressive of an experimental attitude towards the world, and all knowing is a questioning of nature animated by a will to know, which, again, is a manifestation of our will to live.

§18. The Control of Emotion.

Just because it is so intimately volitional, the attitude both of the observer and of the experimenter implies a will *not to frustrate itself*. Hence, while the emotions and interests which stimulate to any research are to be cultivated, those which are extraneous and irrelevant have to be repressed, and must not be allowed to incite us to acts not compatible with our purpose. Thus, if we have set ourselves to watch a dog-fight, no sympathy with the under dog must move us to interfere. If a surgeon is operating on a friend, no thought of his pain and danger must be allowed to disturb the cold precision of his movements. Whether we are testing the truth of the hypothesis dearest to our heart, or trying to confute the pernicious errors of our worst adversary, we must emulate the impersonal impartiality of a recording instrument in observing the consequences of our experiments. This is the meaning and reason of the belief in 'scientific impartiality' and 'dispassionate observation'. It demands not only presence of mind, but also a high degree of self-control. But it does *not* mean that the scientific observer must qualify for his task by suppressing his *whole* emotional nature and abjuring

all scientific aims and interests. This would be both impossible and undesirable. For his desires may be precisely the motive forces which incite him to research and inspire him with the tenacity to carry it through. They become objectionable only if and when, in the *actual* interrogation of nature, they tend to vitiate the response: they then rank with inattention, carelessness, laziness, indifference, and other sources of error and bad observation.

§19. The Need of Guiding Observation.

The fact that a cognitive enterprise may fail from lack of eagerness, as well as from excess, should convince us that observation (and with it experiment) must be *guided* by some clue—of interest, purpose, or previous knowledge. *Random* observation is most likely to be futile and least likely to light upon discoveries. An observer who does not know what to look for will usually fail to see what is going on and will misinterpret even what little he sees, while his reactions will be unintelligent and determined by his anterior habits. His situation will be typically that of a lay observer of a conjuring trick. He will see miracles and impossibilities happen freely, while what is really done will hit the blind spot in his eyes, and pass unperceived, to an incredible extent. So there will be literally no end to his malobservations and misdescriptions. Now the observer of nature, unlike the spectator of a conjuring trick, does not have to consider an *intentionally* deceptive and distracting procedure; but nature's ways can produce more than the effects of trickiness by their profound alienation from human nature. So, initially at least, the observer does not know where to look and what to attend to; his attention has to be guided to the point which must be discriminated from the irrelevant setting which he can, and should, ignore.

In scientific practice this guidance devolves upon 'theory', i.e. hypothesis, and the previous knowledge which has suggested it, thus justifying Aristotle's sagacious paradox that all knowledge arises out of pre-existing knowledge.

But it is clear that this procedure may at times *misguide*, and cannot claim validity. The 'previous knowledge' on which we rely to analyse the new problem may be a survival of primitive ignorance, and nothing but a 'superstition'; so it may mislead us and prevent us from noticing the right clues. Thus we are plunged into the dilemma that without attention and the selectiveness which it involves we can make no progress, but that, with it, we may select wrongly and attend to the wrong points, and go astray.

Once more, therefore, there is no escaping from risks in theory. There are, however, in practice, ways of minimising our danger and increasing the chances of success. As in a detective novel, the investigator can follow var-

ious clues, weigh alternative interpretations, and entertain several hypotheses at once, and pit one against the other. This will sharpen his attention, extend his field of observation, and add to the interest of inquiry by enlisting party spirit. It will enable him to offer employment, and perhaps satisfaction, both to the conservative and to the radical instincts and tendencies. By cultivating a mind open to competing hypotheses he can obtain, not indeed a valid guarantee, but an adequate confidence that he is really observing most of what may be supposed to be relevant at the actual stage of his inquiry. If it is not, he must go on experimenting and observing till he has gained as much assurance as he requires.

§20. The Inevitableness of Risk.

The truth is, of course, that by no manner of means can we avoid all risks. Any procedure which rests on attention is selective, because attention is a volitional attitude which concentrates upon a *portion* of the whole field of observation, and takes the risk of neglecting the rest. It is, therefore, a sort of experiment with the relative values of these portions. It backs itself, as it were, to find the object aimed at in the part attended to, and to neglect the rest with impunity. It does this because it knows that our minds cannot cope with the multitudinous claims on our attention otherwise than by selecting, and would be paralysed if they refused to select.

Hence the 'facts' of any scientific inquiry are always a selection, and a very great deal depends on selecting them intelligently. This operation is habitually taken for granted in logical descriptions of scientific procedure. Yet it is often the hardest of all. The logician gaily declares, "Begin, of course, by assembling your facts," and the scientist is lucky if he is not also told that he must assemble them *all* before he is allowed to proceed. Yet this advice is nonsensical, false, and impossible. It is nonsense, because in no inquiry do the facts ever form a sum or whole: those which are valuable have always to be extricated from a morass of others of which the relevance and the authenticity are in doubt. It is impossible, because no scientist can be sure that the facts he has assembled exhaust the subject, and it is false because it misrepresents the logical nature of the procedure used and the facts employed.

In every inquiry the facts actually assembled and argued from are a selection, namely, that part of the visible *data* which is judged *relevant*. Hence the scientist should firmly reply: "But pray, sir, what *are* our facts?" and point out that he only wants facts which are such for the purpose in hand. Also, that every variation in this purpose will entail differences in the facts relevant to it, and a different analysis of the presented mass of *data*.

There is no justification, therefore, for the favourite fancy of inductive logic that facts were to be conceived mechanically and uncritically as a hard, unyielding mass, easy to observe and impossible to mistake. They appear different in the light of different theories, and change their colour and complexion like chameleons. To realise how readily the 'facts' change according to the point of view, we have only to listen to the speeches of contending counsel in a law suit or to the rival accounts of the same events by two party historians or orators, or to read a fine literary study of this situation, such as Browning's *Ring and the Book*. In any genuine inquiry there is always more or less doubt about the 'facts': even in the sciences they often remain in dispute for ages, where conflicting interests are concerned.

§21. The Limits of Observation and Experiment.

Our powers of observation are limited by the limits to the sensitiveness of our instruments, and ultimately of our senses; for in the end the latter are needed to read off the records of the former. Our power to experiment is limited by the limits of our control; for it is only where we can control the conditions that we can vary the conditions one at a time and experiment with precision.

But experiment is not always possible: for experimental control is never what we start with, and is often difficult to attain. It belongs to a late stage in the development of a science when we have reason to believe that we have analysed our subject sufficiently to put definite questions to which the results of experiment can return definite answers. It is only at this stage that we can (*a*) vary the conditions at will, and (*b*) feel reasonably confident that we are changing only one (relevant) circumstance at a time, which are the two essential requisites of successful experiment. Even so we get no complete guarantee of success. For, even though we have power to experiment, the condition we experiment with may prove unimportant, and, even though it seems single, it may prove to be plural. Like simplicity and complexity, unity and plurality in actual inquiry turn out to be relative to the purpose and the point of view. The typical case in point is the self or soul, which no psychology, from Plato's day to our own, has ever been able to represent either as single and simple or as their opposites *consistently*. Nowadays even advanced sciences like chemistry are forced into similar admissions. Until a few years ago no chemist proposing to experiment with a well-known 'element' like 'lead' would have hesitated to assume that *all 'lead' was lead*, if he had got it chemically pure, which, though laborious, was not impossible. But since the discovery of 'isotopes' he may have to regard every sample of lead as a mixture of 'uranium-lead' and 'thorium-

lead', as probably different in its composition from every other, and so as indefinitely complex. It may still be lead for some purposes, but it is no longer simply lead for others. Its atomic weight, 207.2, becomes a statistical average, while the actual atomic weight of his specimen may be anything between 206 (for pure uranium-lead) to 208 (for pure thorium-lead). Thus 'lead' has become a collective term for an indefinite plurality of sorts of lead, and every sample of it behaves like an individual whose history has to be known to predict his behaviour.

A prudent logician, therefore, will conclude that a thing seems simple only because it has not been inquired into, and single only because no one has been interested to distinguish different cases or aspects of it; further research and more penetrating 'analysis' may be expected everywhere to reveal further differences which may or may not be relevant to a particular inquiry.[9]

So much for Experiment in established sciences where much may be taken as known: in matters where as yet little or nothing is known, we speedily come upon the limits of Experiment. For example, suppose we try to apply Scientific Method to the question of determining whether a certain house is 'haunted', and what is meant thereby. We start, of course, with the stories that have given the house its bad name; and if we are tactful, pertinacious, and lucky, we may get them at first hand. At this point difficult questions will arise as to the psychology of ghost-seers, and the character, history, and motives of the particular witnesses; but in certain cases the evidence may seem to warrant further investigation. We may even obtain access to the house and be allowed to sit up in it—which is a sort of experiment, but under conditions which are deplorably vague. We do not know what enables people to see ghosts, or enables ghosts to become visible, neither do we know what a 'ghost' is, what his habits are, or with what bait he can be caught We are experimenting quite at random, and are not likely to succeed. But it is precisely in these initial stages, when a nascent science is trying for experimental control and neither principles nor procedures are as yet established, that research is most keenly conscious of its logical difficulties and that its method comes out most instructively.[10]

§22. The Operation of Hypotheses.

We see, then, that scientific inquiry never comes to an end of its dealings with 'fact'. 'What the facts really are' remains a subject of investigation, and undergoes continual transformation as our knowledge grows, i.e. as we become better and better able to predict and control the course of events.

This progressive ascertainment of fact, however, may equally be viewed

as a progressive interpretation of *data* by theories which are instrumental in transforming them. These theories also are nothing final or definitive, but hypothetical, experimental, and plastic, and are tested, like the 'facts' they refer to, by the outcome of our operations.

Thus the hypotheses, in the light of which we discern our 'facts', sharpen our eyes and guide our attention to the vital points to be observed: they select what is taken as fact for the purposes of any inquiry from masses of irrelevant detail. Hence when a knowing process prospers we grow confident that its *data* are real facts, and that its hypotheses are helpful and 'true'. But when the hypotheses tried prove unsuitable, and fail to work and to be verified, it is clear that the use of hypotheses may mislead and wreck the inquiry and blind us to the real facts. Thus our chief instrument of success may also conduct us to disaster. Here, as elsewhere in logic, our tools have sharp edges and must be used intelligently. They become dangerous in some hands, and are in no wise fool-proof and infallible.

§23. The Plurality of Hypotheses.

If, however, we are not looking for a mechanical guarantee of validity, we are by no means helpless in this difficulty and can protect ourselves sufficiently. We have simply to accustom ourselves to operate with *more than one* hypothesis. The more brilliantly a hypothesis illuminates one portion of the field of inquiry the more deeply it obscures the rest, and hence every hypothesis *blinds* us to those *data*, which it is not interested in and makes nothing of, even while it opens our eyes to those which it selects as important ('essential') and valuable. Admitting this, it follows that the risk of overlooking what may prove to be important may be minimised by entertaining *a sufficient number* of hypotheses, and playing off one against the other.

This suggestion will seem strange only to a mind which has been stiffened and corrupted by an utterly dogmatic education. Anyone who has been trained to observe the actual process of inquiry, will be familiar with the fact that every step in its progress demands a plurality of possibilities and a choice between alternatives. Where there is nothing but a straight course, and no way of departing from it, there is no thought, nor need for thought. But, where a situation has *problematic* features, thought is stimulated and considers what is the *best* view to be taken, until it is decided by a judgment on the whole situation It is for this reason that every judgment which emerges from such thinking lays claim to the value which is 'truth' (Chap. X).

A certain *technique* in operating with alternative hypotheses arises naturally. In principle every hypothesis that is entertained increases our

chances of overlooking nothing important, and improves the prospect of discovery. Nevertheless, the maxim, 'the more the merrier', does not altogether apply. In practice the psychological limitations of the human mind cut down the number. Usually *two* rival hypotheses, each zealously supported by a party inspired by a natural bias, and offering special advantages in dealing with a burning question, are as much as any science can manage to entertain at a time. But, as each dispute is settled, a further question can be taken up. So the plurality of hypotheses is successive rather than contemporaneous. Nevertheless, a sufficiently capacious mind may do well to remain open to a great range of possibilities, and abundance of hypotheses remains an asset in *theoretic* inquiry.

It may become an impediment when the time for action comes and theoretic knowledge has to be *applied*. For the consciousness of a number of possibilities may then have a distracting and paralysing effect. Single-hearted resolution in acting upon *one* theory then seems the only pathway of salvation, and this seems incompatible with attempts to do justice to a number of competing probabilities. Psychologically action demands psychological certainty, and so reinforces the tendencies to theoretic dogmatism that its long domination in the history of thought should probably be traced to its supposed practical, rather than to its assumed theoretic, urgency.

Nevertheless, both these assumptions would seem to be equally erroneous. It is unnecessary to base truth upon compulsion, and vain to insist on formally valid theory. Nor is it necessary that the certainty demanded for action should be *theoretic*. There is such a thing as *practical* certainty; it is, in fact, the only certainty we ever feel or can attain. Now, practical certainty can coexist with clear consciousness that the theoretic grounds we propose to act on are only probabilities, and not always even very high probabilities.

Nor, again, is it true that in order to *act* we must feel practically certain. How much certainty we require depends on the circumstances of the case. If it is desperate enough we may have to stake our fortunes on a forlorn hope. Where there is *spes una salutis*, its improbability, and the superior probability of a number of unpleasant possibilities, may keenly impress the mind but need not affect our action. Short of that we often embark on a course of action we know to be risky, *faute de mieux*, or because we like to take chances and enjoy the feel of a daring deed. The popularity of games of chance and of sports with a spice of danger testifies to this trait in human character. It is a psychological blunder, therefore, for the logician to require the scientist to be a coward and to run no risks. He should realise that courage is an *intellectual* virtue as well as a practical, and that the thinker who will not budge till he can start from absolute certainty, and who puts safety first and will run no risks, is very unlikely to make discoveries, or indeed to get anywhere at all.

What, then, is the grain of truth in the doctrine that theoretic uncertainty unnerves practical action? It is surely fatal to those whose will is so weak that they cannot 'make up their mind'. Otherwise there is no psychological difficulty about first considering all the relevant alternatives that occur to the mind, estimating their probabilities, and then deciding on the best course of action and resolutely carrying it out in a single-hearted manner. For that is after all precisely what should happen in all thoughtful action and before every genuine judgment. At its *best* the human intelligence *is* capable of reflecting first and acting afterwards, with a gain in range and without loss in vigour; and, if it finds this difficult, a slur is cast upon the quality of the intelligence. A well-balanced mind strives to combine decision in action with unimpaired receptivity towards the lessons of experience, and is not ashamed to change its course when it finds itself heading for the rocks. It can deliberate fully and then act resolutely, acting boldly but not blindly. The 'purely contemplative' mind, on the other hand, that cannot apply its thoughts to reality is *not* the highest, but forms a specialised and often morbid development that should be controlled both in its own interest and in that of society at large.[11]

§24. The Proving of Hypotheses.

It follows, from what has been said about the plurality of possibilities in any inquiry so soon as they are looked for, that the proving of a hypothesis is always a highly *competitive* affair. It is utterly misleading to represent it as a solemn trial and formal testing of a single hypothesis by a jury of rigid and infallible canons of proof, which necessarily ends in its final acceptance or absolute rejection. There are always several hypotheses in the field, and the scientific problem is always *which* of these is to be preferred, on the evidence available. Now the available evidence may vary from day to day; it is also more or less indecisive and ambiguous, in the sense that it will fit into more than one hypothesis with more or less ease. Similarly, our hypotheses are commonly 'ambiguous' likewise in the sense of indeterminate,[12] simply because we cannot at the outset formulate them in terms sufficiently prescient of all the developments of the inquiry, and cannot help leaving them vague about what subsequently turn out to be incompatible alternatives. Hence there are often plenty of vicissitudes in the history of a hypothesis.

Nor are we really entitled to assume that either of these 'ambiguities' must be removable within a definite time. The indeterminateness of terms is due to the possibilities of future inquiry, which cannot be set aside by any *fiat* that the terms shall be taken as definite and precise and their possibilities as limited. This is why, in spite of many logicians, 'plurality of

causes' can never be ignored.[13] And the elasticity of facts is equally ineradicable. They may continue to submit to several interpretations and to elude crucial experiment. The disputes between optimism and pessimism, determinism and indeterminism, mechanism and teleology, etc., will never be decided by any appeal to the facts. These, moreover, may also continue to be discrepant *inter se*. Some may lend themselves to one, others to another, of two incompatible alternatives. There would seem to be no logical reason why the present conflict between the competing theories of light should not be prolonged indefinitely. For, from our postulate that truth cannot be inconsistent, it only follows that we shall continue to cherish a belief and a hope that ultimately all such conflicting theories may be reconciled or superseded, not that our hopes will actually be fulfilled. Nay, it is not even certain that the real will ultimately allow itself to be grasped by human minds at all. All we can be sure of is that we shall be very obstinate in urging this postulate, even upon recalcitrant facts.

Even in sciences, where truth is not actually in dispute, it remains liable to dispute. For doubts may be raised about the historical evidence on which it rests, and new theories may arise which put a new complexion on the 'facts'. When this happens, we often discover to our surprise how insecure was the ground on which the truth's acceptance rested. Its experimental basis is often very limited, and is always limited in principle by the actual number of the experiments taken as proving it. Established truths, therefore, are always sensitive to any source of doubt or error which may spring up in the evidence on which they rest. For example, the whole doctrine of Relativity rests on the Michelson-Morley experiment and its scanty repetitions: the whole existence of Piltdown man (*Eoanthropus dawsoni*) rests on the correctness of his discoverer's statements about the exact locality in which his fragments were found. There is always, then, a *finite* amount of evidence which has to be impugned or discredited in order to upset a 'truth'.

To upset a truth, however, it may suffice to reinterpret the evidence for it. Let a new theory arise and a new issue be raised, and the old facts will frequently become ambiguous, indeterminate, and insufficient. The old observations and experiments, though adequate enough to decide the points they were devised to meet, will not be relevant to, or decisive of, the new issue. For example, in the long dispute about abiogenesis it has been shown, over and over again, that the positive evidence alleged for it depended on conditions of experiment which were insufficiently stringent to exclude all access of living germs. Nevertheless, its disproof cannot be said to be complete so long as it is possible to invalidate the whole of the negative evidence by the suggestion that the means used to kill all organic germs in the substances experimented with, viz. the prolonged application of heat, would be likely to destroy also the conditions under which the inorganic would become

organic. Similarly, in the disputes about fraudulent mediumship, every discovery of a new method of fraudulent manipulation always brings to light a gap in the evidence at this point, and casts a doubt (which may or may not prove well-founded) on all the earlier evidence.

Thus every new theory entails a re-examination and revision of the 'facts', and, generalising, we may say that no care in observation, no skill in experimentation, can guard scientific evidence against unforeseen objections, new conditions, and unknown possibilities of error. We should accustom ourselves, therefore, to think of all truths as relative to the evidence on which they rest, to the verifications which have confirmed them, and to the alternatives to which they were preferred. By constantly bearing these points in mind we shall get out of the habit of looking for an absolute proof to which scientific methods can attach no meaning.

§25. The Cumulative Nature of Proof.

If absolute proof is a chimera, so is a decisive experiment. No single experiment can ever be decisive ('conclusive') however impressive it may seem at the time. For in every science that is not completely explored (and what science nowadays would claim to be that?) there lurk untold possibilities of error: these cannot all be eliminated at the first attempt, and are only realised later. This is the real reason why successful repetition is needed to confirm the results even of the most crucial experiment.

In the ordinary *routine* of the sciences, proof is, accordingly, cumulative. We start in ignorance and perplexity, with doubtful 'facts' and tentative theories, and by working with them gradually transform their logical status. Our evidence grows more solid and trustworthy; of our theories some grow more definite and confident, others fade and waste away. When the balance of probabilities in favour of one view becomes so overwhelming that only the perversest minds can resist its weight, we acclaim an established 'truth'.

It is important to note that in this process we can, and do, utilise evidence which is far from 'cogent', and may even be very defective. If we are not deceived about its defects, we may find that its various bits do not all have *the same* defects, and that the mass, as a whole, covers the whole ground, meets every objection, and cannot be dismissed. Indeed, in the beginnings of any inquiry, when we are still feeling our way, no other policy holds out any prospect of success. We must use the material we have, and endeavour to improve it; if we rejected it bit by bit, because none of it in all respects attained to our standard (or ideal) of 'conclusive' proof, we should render scientific progress impossible.

For initially our evidence is never perfect: any procedure, therefore,

which renders the accumulation of evidence impossible really amounts to a refusal to accept empirical proof. Yet it sounds very specious to declare that bad evidence is utterly unworthy of credence and should be rejected altogether. This contention is sound only if proof must be complete and belief final, and both absolute. But if proof is cumulative and belief a gradual growth, and both admit of infinite degrees, it is invalid and harmful. Actually there are numbers of inquiries in which little or no progress is being made, because the nature of empirical investigation is misconceived in this way, and such clues as exist are not followed up, because the evidence which yields them is not unexceptionable.

Psychical Research is a good example. Here there is probably no single piece of evidence as yet which is individually cogent and which a critical mind ought to find convincing. But, collectively, the evidence is so copious and persists so uniformly through the ages that no candid mind will deny that a case for scientific investigation is made out. Hence Kant's verdict in *Die Träume eines Geistersehers* still stands. "I do not dare," he says, "wholly to deny all truth to the various ghost stories, but with the curious reservation that I doubt each of them singly, but have some belief in them all taken together."[14]

The cumulative nature of proof, of course, explains the paradox, but the whole case is logically instructive. For the mistaken refusal to allow evidence to accumulate can certainly claim the sanction of Formal Logic: so it shows that Formal Logic is not only incapable of assisting research, but capable of actively obstructing it.

§26. Abstraction.

We have seen that the main concern of Scientific Method is always with the empirical testing, by the course of events, of a hypothetical interpretation of the selected subject-matter in which a science takes an interest, and, in ultimate analysis, this means what interests those who cultivate the science. The subject-matter, similarly, is whatever a science takes as real or 'fact'. To this primary concern the other processes which are recognised as entering into scientific investigation may be regarded as subsidiary. They do not introduce any radically novel conceptions.

Abstraction, for example, may be conceived as a form of *selection*. In abstracting we select some factor in what has been given in experience, and consider it as if it existed by itself and apart from its setting. Or, we *abstract from* some feature of the given by imagining it absent. The former method selects what is considered relevant, the latter neglects what is considered irrelevant. In both cases, therefore, our procedure depends on the right to

assume the existence of relevance and irrelevance. In both cases it means concentration on what is judged relevant.

So understood, the scope of Abstraction is plainly very great. It may be said to occur in all attention, all perception, all predication, all classification. For we never perceive all there is in an object; and if to perceive better we concentrate our attention upon its important aspects, we *ipso facto* divert it from the rest. Consciously or unconsciously, our perception is always selective.

In *predication*, similarly, the situation which yields the *subject* we judge about is always selected from a context from the larger part of which abstraction is made. The *predicate* (experimentally) applied to it is torn from its setting in past cases of successful judging, and transferred to the new situation with which, if the judgment is a success, it coalesces in an enlightening manner (Chap. XI, §8).

§27. Classification.

As for *classification* it plainly rests on enormous amounts of abstraction. In classifying a thing along with others, i.e. including it with others in a class or kind, we always ignore as irrelevant—(1) its place, (2) its time, (3) its individuality. Thus we fabricate 'eternal' and 'universal' kinds, abstract universals, and substitute them for the concrete individuals we encounter in the course of events. Whenever we want to handle the real in bulk, this device is very convenient and successful. But that for the purpose in hand nothing depends on the object of our thought being the particular thing it is, at the time it is, and in the place it is, is of course a hypothesis, or rather a series of hypotheses. It may sometimes be true, if we happen to have a purpose for which it is true. Also, if we happen to have made the right abstractions and selections for our purpose, and if we are not trying to argue to cases which are too remote in space or in time.

For scientific purposes classification is often fruitful, because the purposes are such that abstraction from the object's individuality does not matter. Thus in many sciences, like physics and chemistry, the 'facts' are really *statistical*: they do not deal with individuals at all, but with vast aggregates of individuals. If the smallest visible speck of matter is really composed of 20,000 millions of atoms, all our observations clearly must be true of the *average* behaviour of these, and do not deal with individual atoms at all. Now, one of the advantages of averages is that they smooth out individual anomalies, if such there are. So by experimenting with billions of atoms at a time the chemist gets an assurance that he can ignore their individuality.

On the other hand, for other purposes the classificatory abstraction from individuality will certainly break down. If we are really interested in

an individual we always find that he departs from the average of his class somewhere. His behaviour always shows some individual features, and these may be the very points we are concerned to foresee and control. Similarly, the abstraction from time and place may break down. Knowledge that a man was a normal baby, and howled in the regulation manner at the age of one, does not justify a confident forecast of what he will do at twenty-one or at forty-one. It may be true that a mindless thing like fire burns 'here and in Persia', but it does not follow that a *man* will behave in the same way in Persia as in Piccadilly.

To meet this difficulty philosophers have made two proposals, neither of which is acceptable to science. (1) They have declared that the individual is as such unknowable, and not a fit subject for science. This conclusion was first reached by Plato (*Theaetetus*, 209 f.) (Chap. IX, §15), and has often been echoed since. The scientific objection to it is simply that it is untrue. Science does *not* refuse to study the individual case, if it is interesting, as it often is. It could, moreover, do so, even if it were bound always to universalise; for anything it discovered about an individual could easily be universalised, simply *by conceiving it as a case of a kind*: this is easily done, and costs science nothing. The uniquest thing imaginable, a Heidelberg jaw or Trinil skull, can promptly be turned into the 'type specimen' of *Homo Heidelbergensis* or *Pithecanthropus erectus*.

But it need not be. Science can also study the individual for his own sake. Thus the science of psychology *can* set itself to study an individual mind and character, and there are psychologists who do this, often with great ability and success. Only we expect them to entertain us by their writings, and call them *novelists*, and do not make them professors, who are expected to bore us with their instructions.

(2) The second philosophic way of treating individuality is to re-conceive, or rather to re-name, it. It is then called 'the concrete universal', and is made a text for philosophic sermons. This was Hegel's way, for whom it was an article of metaphysical faith; but scientifically it is useless. It is the mere re-statement of a problem, not a solution. It is a scientific fact that universals are useful for handling individuals, e.g. by classifying them. Our classes, however, are abstract universals, on which the Hegelian heaps scorn because they cannot reproduce the concrete real. He means that no list of qualities, however long, will re-constitute the individual whose qualities are enumerated. To this fact the Hegelian merely adds an assertion that nature *has* performed the miracle we cannot conceive—the individual *is* a concrete universal!

But *we* are as wise as before. We know as little as before *how* the qualities are concretely united. We know as little as before *what* universals are predicable of what individual, and how to avoid the error of classifying by means

of *wrong* universals. If we were in doubt before, we are so still. If our problem was to determine whether *Pithecanthropus erectus* was a man or an ape, we are still left to decide it without Hegelian help. For whether he is rightly called a man or wrongly, he is, in either case, a concrete universal, and the scientific question, "A concrete universal *what*? An ape or a man?" does not interest the Hegelian. And the sweeping doubt everywhere nourished by evolutionist discoveries, as to whether individuals are not the only reals *in rerum natura*, and classes only subjective conveniences, survives in full force.

Science, therefore, will do well to reconcile itself to the situation, and to accept any abstraction that will work, without raising metaphysical questions as to what makes them work when they do. It may leave the philosophers to their sterile wrangles about the number, order, and deduction of their 'categories', which are just classifications too, of doubtful value.

It is scientifically more important to note that every predication is a classification. To predicate *S is P* is to claim that the individual quality of a particular S may properly be expressed by the general term P. When pressed, we have, however, to admit that, strictly, the S is P in its own particular way; it is not P in general, but is the P it is under *these* circumstances. We can only plead that for our purpose this blurring of the actual circumstances does not affect the truth or value of our judgment. In ordinary predication our purposes are far more fugitive and transient than those embodied in the great systems of scientific classification; so it is natural enough that we are conscious of them, while in the latter case we are apt to forget the abstractions we use. It required the Darwinian revolution in biology to disabuse scientists of belief in the eternal validity of their classifications, and to remind them of their practical function.

§28. Idealisation and Fiction.

Between Abstraction, Idealisation, and Fiction there are no hard and fast lines to be drawn. By stripping off their actual setting, thought can equally raise qualities to 'ideals', or reduce them to 'fictions'. The base line of a survey or a tennis-court becomes an ideal line after Euclid's heart by abstracting from its three-dimensionality and crookedness; but it then equally becomes a 'fiction' that can find no home in physical reality. In fact, 'idealisation' and 'fiction' are only opposite ways of *valuing* an abstraction, and the choice between them is often a matter merely of taste.

Consider e.g. an exact measurement, a complete vacuum, a pure mechanism, an elastic body, a frictionless surface, a non-conductor, a perfect gas or fluid, an economic man, free trade, a wise ruler, pure pleasure, perfect health, a disinterested motive: are they to be called abstractions or ideali-

sations? They all occur, and have a valid use, in a respectable science; but they have all to be used with discretion, if they are not to become 'outrageous fictions'. The latter may worm their way even into the haughtiest sciences; even at Cambridge, Mathematical Tripos Papers used to contain questions of the type derided by Sir Oliver Lodge as beginning—'Take a small elephant whose weight may be neglected . . .' One can, of course, construct problems in mechanics in which the weight even of an elephant may be abstracted from, and there is no *formal* difference between a true and a false abstraction and a true and a false ideal, any more than between a true and a false hypothesis or analogy. 'True' and 'false' involve reference to purpose and conduciveness (or otherwise) to that, and the value in each case depends on the use to which the instrument of research is put and on the consequences achieved by its means.

However, even at their best, the sciences remain full of 'fictions' which are very useful and methodologically indispensable. Even our mathematics would be useless and in applicable, if we did not *feign* that physical objects had the shapes and properties that properly belong to our mathematical ideals alone. The objects of *pure* mathematics are equally abstractions, fictions, and ideals.

§29. Laws of Nature.[15]

A law of nature is usually called an observed uniformity, but this is far from being the whole story. Actually any observed law is a form of Hypothesis, or rather the outcome of a series of hypotheses, and it is a pity that inductive logics have generally slurred over what very audacious and complicated assumptions are involved.

We should inquire, in the first place, why it is assumed that there are laws at all. To this question the only answer would appear to be, 'in order that we may be encouraged to search for them'. Now, this assumption is a hypothesis or postulate. It is not a necessity of thought. It is perfectly possible to conceive a world in which nothing happened according to law and every event was an unpredictable miracle. Nor would such a world necessarily be *bad*; it might easily be better than ours. In it we should, however, have to take things as they came; there would be in it neither prescience nor science. If, therefore, we wanted to predict, it would not satisfy us: in other words, 'law' is a *postulate of method*.

Secondly, the general assumption that Nature conforms to law, which is called the Uniformity of Nature, ranks among the principles called a priori. It is so called by those who have seen that laws are not observed facts but interpretations which have to be read into the facts before the facts will

yield them, but have *not* seen that they are read in *experimentally*, and are in no wise certain when first tried, growing certain only gradually by the success of their working.

Moreover, thirdly, this conviction that *there are laws* is no guide whatever to the discovery of the particular laws which we believe to hold in fact, and use to forecast events. Whatever we allege and believe about the former principle, it is admitted that the formulation of particular laws can come only from experience, as a fruit, not of philosophic criticism, but of scientific research. Even Kant does not deny this, though it did not disturb his philosophic complacency to find that he had assigned 'Law' and 'laws' to quite different sources, crediting the former to an 'a priori' category of causality, and the latter to 'experience', and though he has next to nothing to say about the problem of discovering particular laws. Yet this is the essential scientific problem, and, unless the Uniformity of Nature can help us to solve it, it remains sheer eyewash.

Now, actually, belief in the Uniformity of Nature does help to a certain extent. If we had no belief at all in the possibility of such a thing as a 'law', it would not occur to us to look for a law anywhere. On the other hand, we need not believe in the *universality* of law in order to look for laws in any department of nature in which we happen to interest ourselves. For we wish to be able to control it, and prediction is a condition of control. Moreover, 'law', as we have just seen, is a postulate of prediction. The assumption of 'laws of nature' is the most successful of the many devices men have tried for calculating what is going to happen. Its aim is to get an instrument for guiding expectation and preparation; we desire prescience to obtain control.

But in the first instance our desire to control and predict may be departmental. We shall then profess indifference to what happens outside our sphere of interest. "Scientifically it makes no difference at all that the investigator of one subject should believe that another (in which he is not interested) is the sport of chance; except in so far as this belief may induce him to confine himself more strictly to his own sphere of the knowable and so promote his efficiency."[16] Belief in universal law, then, only arises with the desire for universal control.

But it is no substitute for detailed search for laws. For "from the notion of Law no laws are deducible."[17] And Scientific Method must, and can, concern itself with the finding and formulating of the particular laws.

§30. The Finding and Proving of Laws of Nature.

We have already rejected[18] the notion that laws of nature are just observed uniformities. They can be represented as such only *after* their discovery,

when all the bad observations and false clues that attended the inquiry have been eliminated. But what is actually observed is never the law, and is never quite uniform. The crude facts as observed are never exact, and never quite conform to any suggested 'law', which is an exact formula meant to colligate, *and sift*, them.

Nor is the law finally adopted as the best formula, usually the only one considered. There are mostly several alternatives to choose among, and concordance with the actual observations is not the only canon used. The scientist gives a natural preference to a simpler formula as against a more complicated, not because he imagines nature is bound to follow what seems to him the simpler course, but for the sound methodological reason that it is easier to handle. He knows, also, that observations are not all of equal value; better observers and more favourable conditions make some observations better than others: some, therefore, must be discounted or discarded. As, moreover, no observations can be exact, no two can be expected to yield quite the same values: hence he takes an average, and disregards small discrepancies, until he has reduced his 'facts' into 'good agreement' with his favoured formula.

It should be remembered, also, that his *rôle* was never passive from the first. The 'facts' he started from were the *data* he judged worth arguing *about* and good enough to argue *from*. This initial procedure already involved him in a good deal of *selection*.

Now in a well-established science such selection is pretty safe. We can be pretty certain what *data* are relevant and good. But in the beginnings of any subject of inquiry we encounter masses of non-scientific evidence. This has to be sifted, and, mostly, scrapped. But we must be careful to allow for the fact that, just because there is no good evidence at this stage, the 'real facts', as they will turn out to be, must be lurking in the *bad* evidence, and have to be extracted out of an ore not rich in precious metal. It is also clear that in contentious matters differences of opinion may begin thus early and involve controversy as to what *data* should be selected. Some inquiries indeed, e.g. in philosophy and theology, never seem to get beyond these initial controversies.

The *data* selected should next be viewed in the light of a comprehensive formula or hypothetical 'law'. The question to be asked—does it fit the facts?—is always a question of more or less. If the values deducible from the tentative law are in good agreement with the observed facts, the law gets scientific status and has to be reckoned with further. On the other hand, the question of its *provenance* is not important. For all that science cares, it may have originated in a dream, like Verner's Law.

For a 'law' may be suggested in very various ways. (*a*) It may be directly and obviously suggested by the *data* (selected as above), and these may suggest no other. But this will be rare.

(*b*) More often the accepted *data* will suggest different laws to different minds, and so start a controversy as to which is the best interpretation. Such a controversy may be hard to end, if the parties will not agree about their standard of 'best'. Usually the *simplest* or *most convenient* is preferred. But most convenient for *what and whom*? If the aims and interests of the parties differ, they may differ about the most convenient interpretation. Thus the interpretation of animal behaviour will be very different according as we are or are not willing to admit that it may be 'conscious' and intelligent. 'Simplicity', similarly, is ambiguous; a theory that is simpler from one point of view may be more complex from another, a case illustrated by Euclid's space and Einstein's.

(*c*) Most commonly, however, the interpretation does not come from the *data* themselves, but from extraneous sources. Of these the most obviously legitimate spring from the general theory of the subject. Thus the extra weight of atmospheric 'nitrogen' was naturally accounted for by the admixture of a heavier gas, and the discrepancy between the calculated and the observed motions of Uranus by the existence of a further planet. But the 'law' may also come from another science, as when Darwin borrowed Malthus's law of population and when biological observations are interpreted by notions drawn from chemistry or physics, and astronomical illusions explained by psychology. And now and again it may be necessary to take up with remote analogies and wild suggestions, and to run counter to well-established principles. The irregularities of Mercury did not prove to be analogous with those of Uranus, but involved the whole of Einstein's theory of Relativity and the end of Euclid's long reign over the space of physics. We should also remind ourselves that in the last decade or two most of the fundamental assumptions of physics, like the law of gravitation, the indestructibility of matter, and the conservation of energy, have been found wanting in accuracy.

The law-making scientist, having got his 'law' to fit his 'facts' without acute discomfort, is tempted to proclaim it as *the* law. But he has also to prove it the *best* law, and to dispose of rival formulas. Or again, *none* of his laws may be a perfect fit. There will then be need for *crucial* experiments and a search for further *data* that will not be so amiably ambiguous as to fall in with alternative laws, but will vote decisively for one.

Now, science hitherto has been singularly fortunate in not encountering many clear cases either of persistent ambiguity in the 'facts' or of failure to find a suitable 'law'; though the present trouble with the two theories of light looks as if it might be fairly persistent. But in philosophy alternative interpretations are normal and practically ineradicable. Definite experiment is almost impossible, the facts are persistently neutral, plastic, and submissive to sweeping interpretations which are hard to prove, because hard to

disprove. A philosophic view, when worsted in argument, simply re-states itself in slightly modified language; and if its 'reasons', as is often the case, are simply *camouflage* for instincts and spiritual cravings, it hardly does even this. For it can always be sure that it will continue to be believed by those to whom it appeals. Hence the great philosophic antitheses, like those between realism and idealism, rationalism and voluntarism, pessimism and optimism, continue their indecisive contests from age to age.

It might be supposed that when a law has been adopted, after the fashion sketched above, it had still to be *verified*. But in reality the whole competition out of which it has emerged *victoriously* is its verification. Of course, if the 'law' is 'true', it has to continue to maintain itself by its working; for no *final* verification is known to science. If it encounters new 'facts' which challenge it, or new theories which promise more, it may have to fight for its title, and will probably undergo amendment. But if the changes are slight it will continue to be called 'the same' law, and to be verified unendingly.

§31. Laws and Habits.

Nevertheless, the use of the term 'law' to denote the device by which our science forecasts the course of events entails serious drawbacks if it is not understood. Thus it tempts us fatally to speak of things '*obeying*' laws, thereby suggesting in nature a respect for the law-giving of human science and in the conforming things a submissiveness to the law which are booby-traps for philosophers and scientists alike. Actually, the law has no police force to execute its behests, and the constitution of nature can hardly be required to recognise our law-giving. *Why, then, do our formulas work?*

The right answer would appear to be, "because things have *habits*." The laws of nature, in so far as they are correctly formulated, are descriptions of the habits of things. Subjectively we *know* them to be convenient formulas which work; objectively we *believe* them to be confirmed habits which seem to be practically fixed.

But we need not ascribe to the things any consciousness of the habits they have. There is nothing shocking in the idea that things may have habits without knowing it. This is only to say they are like us. For we, too, are never conscious of all our habits.

Habit, therefore, implies an analogy with human nature. But we should never shrink from rendering the world more commensurate with our intelligence when we can do so with success. We are familiar with the nature and growth of habit in ourselves. We know how it stiffens and steadies our actions. We have merely to apply this notion to beings much

older, stabler, and stupider than ourselves in order to get habits rigid enough to be conceived as 'laws of nature'.

Our procedure may be decried a 'sheer anthropomorphism'; but in ultimate analysis all interpretation is anthropomorphic. It can be nothing else. We can contemplate the world only with the eyes and brains and feelings we have. Human analogies run through all fancy, all fiction, all science, all philosophy; they differ only in their remoteness and flightiness. So science need not be squeamish in ascribing habits to things.

Nor need it take sides in the metaphysical dispute between those who would explain nature in terms of human nature and those who would explain human nature in terms of nature. It is entitled to conceive both 'laws' and habits methodologically, and to use either, as seems convenient. At one time it may reduce all 'laws' to 'habits', at another all spontaneity to law, without pleading guilty either to anthropomorphism or to materialism. Thus it can legitimately have it *both* ways; for *methods* are public highways, and their use does not imply allegiance to any shibboleth of metaphysics.

§32. How Laws Apply to Cases.

A second drawback to the use of 'law' in Scientific Method is that already mentioned in §27. The law seems to be an abstract universal formula, which gets no grip on the particular case. This, however, is sheer misunderstanding. It is an illusion generated by the unwise habit of contemplating the law only in its *unapplied* condition, and *abstracting from its use*. Taken thus it is an empty formula, devoid of any but potential meaning; in fact, in Mr Bertrand Russell's language, a 'propositional function'. But if we want to use it, we fill up the blanks in its formula, assign definite values to its variables, apply it to the case we are concerned with, and observe how it bears out our calculation.

It is quite untrue, therefore, that science is too 'universal' to trouble about the particular case. Properly understood, it is concerned with nothing else. A universal formula that failed to predict particular cases would have to be scrapped. Here too, then, it appears that the *use* of science is an integral constituent of its *meaning*.

NOTES

1. *Journal of Philosophy*, xv, p. 673.
2. *Remembering and Forgetting*, p. 13.
3. *Consciousness*, pp. 39, 42, etc.

4. See, further, *Humanism*, p. 225.

5. For the logical meaning of 'contradiction' see, further, H. V. Knox, *The Will to be Free*, part vi.

6. Cp. *Problems of Belief*, p. 43.

7. This remark applies to scientific investigation rather than to moral action. In practical affairs it may sometimes be undesirable to allow full liberty of experimenting to all and sundry on all occasions. But even here societies tend to overrate the value of uniformity and probably harm themselves more by being intolerant than by being indulgent; for their intolerance is not a fruit of experience but a relic of barbarism and a deduction from a false theory of truth. Those societies which still maintain a censorship of scientific investigation should at least learn to use it not to suppress unorthodoxy (which is generally stimulating), but to curb futility, i.e. the preference for trivial, pedantic, and (relatively) worthless inquiries to which the academic man is naturally prone and on which academic institutions are tempted to set such a high premium.

8. Cp. H. V. Knox, *The Will to be Free*, p. 216.

9. Hence the 'ideal 'of a reciprocating cause which never develops any plurality in its bosom is only a disguise of our old enemy, the final and incorrigible truth. Cp. *Formal Logic*, pp. 305-9.

10. See, further, "Some Logical Aspects of Psychical Research" in *The Case for and against Psychical Belief*, ed. by Carl Murchison (1927).

11. At present the social value of many philosophers, some pedants, and even 'pure' mathematicians, would appear to be definitely negative.

12. For this see *Formal Logic*, chap. ii, §8.

13. Cp. *Formal Logic*, p. 306 f.

14. Rosenkranz, *Kant*, vol. vii, p. 77.

15. See, further, *Formal Logic*, chap. xxi.

16. *Formal Logic*, p. 311.

17. Ibid.

18. §15, *init*.

42

HOW FAR DOES SCIENCE NEED DETERMINISM?

The oddest thing, perhaps, about philosophy and science alike, is how little attention they have paid to the alternatives to accepted views, even when these alternatives were logically obvious and inherently quite as probable as the accepted views. Thus it is quite as easy to argue that life is not worth living as that it is, and that all physical phenomena are relative as that they are absolute. Yet such alternatives are simply suppressed by the great majority of philosophers and scientists. It seems to require something like a sensational discovery or a revolutionary upheaval of thought to induce men to consider alternatives they should have kept in mind all along. Fortunately we appear to be living in one of these revolutionary eras in which obsolete beliefs are being crushed into fertilizers for new ideas.

At the moment, the revolutionary focus is situated in the dominant science of physics. Physics has been plunged into embarrassment and apparent conflict with what was believed to be one of the first principles of scientific method by its wonderful success in getting much nearer to the ultimate constituents of physical reality than it had ever done before. Instead of handling what were from time to time considered ultimate particles by the thousands of millions at a time, physicists had found ways of

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Our Human Truths (New York: Columbia University Press, 1939), pp. 168–175.

observing the behavior of individual "atoms," nay of various theoretical subdivisions of that formerly indivisible *ens rationis* which did not exceed a two-thousandth part of the atom's "mass."

They were then amazed and shocked to find that electrons and their kin appeared to elude or defy one of the best attested principles of scientific method. It had long been assumed that with sufficient knowledge of the antecedents of a scientific object its future behavior could be predicted infallibly and exactly. But in the case of an electron this seemed to be impossible: you could calculate either its place or its velocity, but never both together; and consequently its behavior always exhibited a measure of indetermination or contingency. Indeed no exact prediction of what it would do next was even conceivable. Of course, however, there was a good and sufficient reason for this disconcerting fact. In order to observe the behavior of an electron, no other method was known but to throw light upon it. But to do this meant to subject it to light pressure, and this was enough to send it scurrying away. Hence the would-be observer could never tell where it was to be observed, and his predictions might always fail. There followed a number of conclusions deadly to the established doctrine of deterministic science:

(1) There exist physical events which are unpredictable in principle. (2) The assumption that laws of nature are exact and universal formulas was discredited. Their status was reduced to that of statistical regularities or expectations, exemplified by large numbers, but not necessarily applying to the individual case. (3) The assumption that the observer's manipulations in observing his object make no difference to it was refuted for the science of physics. (4) Consequently the assumption that physics has no need to take into account the observer's personality and his "personal equation," was disproved.

Now the first things to be pointed out about these consequences are that every one of them could and should have been anticipated theoretically before it was rendered practically certain, and that if physicists had been more solicitous about the possible alternatives to the doctrines they were assuming they could all have been discovered long ago.

Thus in the first place it was always obvious that if the physical theories about molecules and atoms were correct, physical science was handling physical objects only by the myriad. Hence there was no proof that the laws of physics were not statistical, as those of psychology and sociology had long been known to be. Moreover, there had never been any need to take them as anything more. It was possible, and indeed easier, to take scientific determinism as an assumption of method or postulate of predictability, rather than as a fact in nature. Determinism is scientifically just as useful if it is conceived as a methodological assumption; but a methodological

assumption may always turn into a methodological fiction when limits to its applicability are discovered. This is all that Heisenberg's Principle of Indeterminacy requires the physicists to confess; what it upset was, not the logical status of determinism, but a metaphysical inference which had been, falsely and needlessly, drawn from it.

Next, there had never been any need to regard laws of nature as more than statistical, or as more than the established habits of physical objects. The evidence from which they were extracted could never have proved them universal, absolute, and immutable, any more than biological evidence could ever have proved the fixity of species in the days before the rise of evolutionism.

Thirdly, the assumption that the observing operation leaves the object unaffected had never been more than a convenient fiction. It had never worked in the social sciences, but had merely marked the *differentia* between mechanical and intelligent objects. Also, it had long been known that taken in the mass the latter might be treated as mechanical. Why then should it have been such a shock to discover that supposedly mechanical objects displayed individuality when given the chance and taken individually?

Lastly, the abstraction from personality, which was supposed to be characteristic of scientific method, had long been known to be a fiction, by reason of the fact that some of the sciences had found themselves unable to make it for some of their purposes. Thus, astronomy had long been forced to allow for the "personal equation" of its observers; and this should also have prompted psychologists to recognize a personal factor in all scientific observing; but unfortunately many of them mistakenly and snobbishly imagined that they could raise their scientific status by adopting the assumptions and fictions of the mechanical sciences. The logicians also should have been careful to point out that every inquiry was essentially a purposive enterprise and that, therefore, to abstract from its purpose was liable to make nonsense of any logical process.

May we take it as admitted, then, that science needs determinism only as a method subservient to the purpose of predicting the future course of events? It has no need whatever to take it as a statement of actual fact or to be disconcerted when it discovers that its application to the real has limits. On the contrary, scientists should be proud of having themselves discovered the limitations to which their working assumptions are subject. For, as in the similar case of the discovery of the relativity of all physical properties, they have thereby taught the philosophers and especially the logicians an invaluable lesson, both about the method of science and about the nature of knowledge.

The philosophers ought to have been profoundly grateful for the

instruction. But, alas, for the most part they were not. They were unable to emancipate themselves from the errors of their tradition, because, unlike the scientists, they were not accustomed to test their theories by the facts of observation.

Even when an exceptionally open-minded philosopher confronted them with such facts, they usually refused to recognize them and never drew the obvious inferences from them. I have space to illustrate this habit from one example alone; but it is the palmary example, that is, Hume's criticism of the superstitions about causes. Hume pointed out that the necessary connexion supposed to exist between the cause and the effect was not a fact of observation but a fiction, a human addition to the facts, which, Hume thought, rested only on our psychological habits of expectation. The old philosophic doctrines about the universal law of causation were thereby completely overthrown. But the philosophers did not understand it so. They denounced Hume as a skeptic, but made little attempt to understand the causal postulate more intelligently and to inquire into its meaning and use.

Now the inquiries that should obviously have been suggested by Hume's discovery were such as these: (1) If necessary connexion is a human attitude towards events how is it related to the allegation of contingency and to the human consciousness of a freedom to do or to leave undone? Clearly these can no longer be dismissed as manifest absurdities; they may even turn out to be likewise based on human psychology. (2) Again, how is the line to be drawn between the cause and the effect, and what are their respective limits? Is not this line also relative to human designs, purposes, and interests? (3) What indeed is the justification for the analysis of the flow of happenings into regular series of effects and their causes? How were they discovered to belong together? How was the distinction between effects and events established? (4) Nay, what right have we to select events at all from this flux and to isolate them for separate inquiry?

It is notorious that none of these obvious and instructive questions was asked by the philosophers who succeeded Hume. Instead they lavished infinite pains on obscuring and reversing his results and on patching up the old doctrines of necessity and universal causality which he had exploded. They did it very clumsily and quite inadequately. Kant, for example, who was generally supposed to have had most success in "refuting Hume," while accepting from Hume the assumption that causality ought to be something an outside observer can notice about the course of events, imagined that the subjective factor detected in a causal sequence could be rendered innocuous by declaring that it was one of a dozen "a priori categories" imposed by the mind in viewing its objects. He admitted that collectively the categories interposed an impenetrable

screen between the mind and the Real but insisted that without them no objectivity could arise.

But, on his own showing they did not solve the problem for which they were invented. When Kant (tardily and dimly) realized that the problem of justifying the practice of causal explanation required him to distinguish causality from casual sequences, he could think of no better criterion to allege than that the former were irreversible and the latter reversible. Yet the upshot of his own doctrine of causality was that all events in the phenomenal world were necessarily determined and therefore irreversible and unalterable, although he somehow persuaded himself that this assumption was not incompatible with the noumenal freedom of moral agents.

Moreover, it never occurred either to Kant or to Hume that the whole practice of causal analysis stood in need of vindication. Before any question could arise as to whether a particular series of events should be regarded as causal or casual, the common-sense procedure of dissecting the total flow of events and selecting objects of inquiry should have been accounted for; and the attempt to do so would at once have proved fatal to the assumptions Kant had taken over from Hume.

It would then have appeared that science is never the fruit of passive observation of phenomena, but springs always from purposive manipulation and intelligent interference with the given. Also that the given itself is always a selection, determined by human interests and purposes and far more "taken" than "given." In short, the whole intellectualist description of knowing would have been recognized as a fiction which ought to be scrapped and superseded by a more voluntarist account.

If only philosophers had been willing to correct these consequences of their intellectualist bias, Hume's criticism of the current notion of causation would have ceased to terrify them with the bogey of skepticism. They would have felt free to consider whether the notions of necessity and of freedom were not correlative and logically on a par, both being additions made by us to the observable with the purpose of justifying the practice of extracting manageable items from the flow of events. The problem of causal analysis would thereupon have sup planted that of causal synthesis as the moral to be drawn from the *débâcle* wrought by Hume.

Nay more, Hume's criticism should have become fruitful of further inquiry into the whole notion of necessity and of a thorough exploration of its ambiguities. It would speedily have appeared how little need there is to take "necessity" as meaning more than "need." A little unprejudiced research would have revealed that the whole need for "logical necessity" is rooted in an accident of the history of logic. Our logic happens to have sprung from the dialectics of the Greek schools. These exercises put a great premium on any procedure whereby an opponent could be compelled to

surrender to a verbal argument and to own himself beaten. Accordingly, a disputant always tried to represent his own (psychologically) natural train of thought as being "logically necessary," that is, as capable of compelling his opponents' assent; and the syllogistic form was hailed with rapture because it was taken to guarantee just this. But it was a grave mistake to transfer the procedure of necessary demonstration to the method of science and the investigation of nature. The latter yielded only the growing probabilities and satisfactions of a progressive verification of truths that are, not "necessary," but "valuable"—all the more valuable because they are not necessary. Thus it is only an obsolete logic which requires scientific truth to lay claim to "necessity"; and the only necessity which really occurs in a more enlightened logic is that which "follows" from the initial assumptions and agreements that delimit a science. But the reasons why these cannot be altered at will and without notice are ethical and psychological rather than logical, and so in the end "necessities" are always reducible to "needs."

May we then conclude that although determinism is needed for the scientific purpose of prediction, it need in nowise be taken as an ultimate fact of metaphysics? But what a pity it is that philosophers have so much more faith in coercion by the big stick than in the avowal of human interests!

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