The Academic Synopticon

Part Seven
Human Nature, Culture, and Technology

Operational Terms and their Definitions

> The idea that in order to get clear about the meaning of a general term one had to find the common element in all its applications has shackled philosophical investigation; for it has not only led to no result, but also made the philosopher dismiss as irrelevant the concrete cases, which alone could have helped him understand the usage of the general term. – Ludwig Wittgenstein, Blue Book, pp. 19-20.

The Pragmatic maxim: a conception of something real is about its capacities to affect empirical matters. To properly conceive something real in the world of life, prescribe its consequences for other organic matters. Organic concepts require *operational* definitions, not metrical definitions. A *metrical* definition holds a concept to the standards of (a) strict consistency and (b) no counterexamples. Metrical definitions are ideal for mathematization and mechanization. Friedrich Nietzsche said, "Definier bar ist nur Das, was keine Geschichte hat." (You can only define things that have no history.) He was complaining about formal/metrical definition, which kills life to define it.

To understand an *operational* definition, relax (a) and (b) standards.

(a*) Relaxing consistency: terms used in the conception can have vagueness and circularity.
"A heart pumps blood through the body's circulatory system, the system that sends pumped blood through it, to the entire body where blood can reach."
(b*) Relaxing counter-examples: a seeming counter-example would and should fit the conception except for odd circumstances. "Here is a heart that isn't pumping blood."

Features of operational definitions for terms:

1. A term can be non-exclusive and non-binary.
2. A term can have more than one contrary.
3. A term applies better to a whole, rather than a part (unless a part is treated as a whole too).
4. A term applies well to populations, not just aggregations.
5. A term points to something real as a generality, not just a particularity or universality.
6. A term refers to something with a genesis and genealogy, not just contingent circumstances.

Operational definitions fall between functional definitions and mechanical definitions.

FUNCTIONAL motive for a goal	OPERATIONAL application of a method	MECHANICAL concrete mechanism
weapon "can be used to kill another animal"	weaponry "implement crafted for expert lethality to humans"	artillery "machine for launching long-range projectile destruction"
healing "can be done to relieve distress from unhealthiness"	medicinal "processed biologic to aid bodily healing abilities"	antidote "medicine for countering harmful effects of poison"
money "can be used as temporary medium of exchange"	currency "material crafted for durable and general exchange value"	coinage "small metal disks serving as government-approved currency"

The "Definitional Fallacy" substitutes a functional or mechanical concept for an Operational Term.

Human Generics: Three Kinds

A "universal" adaptation must be defined in operational terms, and treated them *abductively* rather than just inductively. To detect an adaptive pattern from the deep past, the sampling distribution of a trait matters more for an adaptation's genealogy. There are four different criteria for being statistically generic.

Is Activity A statistically common?	Is Activity A genealogically Generic?
A. <5% of the whole set are observed doing A on their own.	A. Not generic. To be generic, it cannot be locally contingent, due to inadvertent, opportunistic, or occasional events.
B. >95% of the whole set display A.	B. Possibly generic, but may be due to recent widespread contingencies and conditions.
>95% of Sapiens do A.	Possibly generic, but may be due to recent widespread adaptations and adoptions.
"Activity A is pervasive."	If recent conventionality is ruled out, then "Activity A is *pervasively generic* to humans."
C. All proper subsets of the whole have many individuals displaying A.	C. Probably generic, but there is the possibility of a widespread contingency or global condition.
All human subgroups (cultures, societies) have a preponderance of members doing A.	Probably generic, but there is a low possibility of a complete diffusion of a convention.
"Activity A is prevalent."	If recent conventionality is ruled out, then "Activity A is *prevalently generic* to humans."
D. All proper subsets of the whole have the same % of individuals displaying A.	D. Surely generic, unless a singularly specific contingency has been efficacious everywhere.
All human subgroups (cultures, societies) have a similar % of members doing A.	Surely generic, unless a singularly specific convention has been promoted everywhere.
"Activity A is persistent."	"Activity A is *persistently generic* to humans."

An Operational Definition of Culture: Humanity's Culture consists of the adaptive activities of the *Cultural Praxes*.

Operational Definition of a "Practice":
A goal-directed behavioral pattern acquired from guidance and improvably practiced, for situations when it ought to be done *and* one ought to be doing it. Animal habits are transmissible, but they are non-normative for the species; the behavior is reactive (provoked by another), emulative (not precisely imitative), and sporadic (not reliably done). Whale song and bird song come close to a practice – both involving music, interestingly.

Operational definition of a "Cultural Practice":
A practice that is *generically prevalent* for all humanity across multiple generations by being inculcated through *pervasive* joint activities.

Operational definition of a "Cultural Praxis":
A Cultural Practice where expert mastery in that practice is *persistently generic* across all humanity. Expert mastery performs the Form's practices in both excellent and educational ways.

Human Generics

Culturally prevalent? = candidate activity that may be either prevalently generic or just widespread
Cultural Generic = a broader cultural practice that is prevalently generic now
Sapiens Praxis = the general category of H. Sapiens Praxes since 200kya
Homo Praxis = praxes among Heidelbergensis, Neanderthal, Sapiens for 700kya
Homo Universal = universals inherent from H. Habilis 3mya to later Homo species

Table. Cultural Practices that are *not* Culturally Prevalent

Cultural PRACTICE	**Culturally prevalent?**	**Cultural Generic**	**Sapiens Praxis (Praxes)**	**Homo Praxis**	**Homo Universal**
musical band	No. Widespread due to enjoyment but other social forms can substitute	Ensembles (for music performance)	Music + Team	Group Music	Music
theater	No. Widespread due to enjoyment but other social forms can substitute	Ensembles (for acting performance)	Acting + Ritual	Role Play	Play
team sports	No. Widespread due to enjoyment and adding organization to sports	Sport (athletic competition plus tech)	Game	Role Play	Play
weaponry	No. Widespread due to utility and adding tech to combat	Combat (with tech)	Hunting	Implement	Techne
war	No. Widespread due to adding organization to combat	Group Combat (with weaponry)	Clan (kinship alliance)	Team	Ally
government	No. Widespread due to adding organization to power	Chiefdom (with clan/tribe)	Clan (kinship alliance)	Team	Ally
marriage	No. Widespread to due to status achievement	Household (with ritual)	Kinship + Role Play	Kinship	Kin
cemetery	No. Widespread due to reverence but other practices can substitute	Grave (return to earth, includes cremation)	Burial + Ritual	Respect for Deceased	Myth
cuisine	No. Widespread due to enjoyment but other social forms can substitute	Recipe (with artistry)	Cooking tradition	Cooking	Techne
poetry	No. Widespread due to enjoyment but other social forms can substitute	Narration	Mimesis + Acting	Mimesis	Lang
writing	No. Widespread due to social utility but not necessary	Speech (with artistry)	Mimesis	Mimesis	Lang
painting	No. Widespread due to enjoyment but other techniques are available	Drawing	Artistry	Graphics	Techne
house	No. Widespread to due to utility but not necessary	Domicile (with household)	Shelter	Rock/cave shelter	Techne
school	No. Widespread due to organization with education	Education (with narration)	Education	Instruction	Learning

Society, Ideology, and Searching for Human Generics

"I took great pains not to laugh at human actions, or mourn them, or curse them, but only to understand them." Baruch Spinoza, *Tractatus Theologico-Politicus* (The Collected Works of Spinoza, vol 2, Princeton UP 2016, p. 505)

Living is groups larger than the close family is typical for Sapiens. Greater social complexity introduced novel structures to interpersonal relationships and roles. While a gradual process down to the present, steps and stages can be distinguished. Due to the contingencies and conventionalities of complex society after around 10,000 years ago, their distinctive features are not candidates for cultural generics. To properly identify genuine cultural generics, layers of recent society have to be pulled back so that the lenses of those layers do not distort observation.

The field of Archaeoethnology investigates the cultural formations and developments undergone by the Homo genus, going back to Homo habilis over 2 million years ago and down to Homo sapiens, the humans of the Stone Age. Evolutionary biology studies physiological modifications allowing the originations of cultural forms and features (e.g. musicality, language, tool use), while Cognitive archaeology studies the development of mental capabilities permitting complex group behaviors (mutual understanding, instruction, reciprocity, moralizing, status, and so on).

Homo Sapiens emerged as a species with band-sized groups, like the Homo Heidelbergensis species that Sapiens evolved from in Africa around 250,000 years ago (250 kya), and the Neanderthals which also came from Heidelbergensis in Europe. The extended family of the "band" numbering perhaps 30 individuals, that kinship form universal to Sapiens and inherited from early Homo species such as Heidelbergensis, was later joined by the "clan" consisting of a "family of families" numbering as many as 100 to 300 individuals. A clan displays typical features as a common language, shared customs, endogenous marriage, elder leadership, and ingroup/outgroup displays (distinctive adornment, clothing, ritual, etc.). Within a clan, despite the prevalence of gendered roles, any adult would be in possession of most or all of the accumulated knowledge of the entire clan.

Scaling up to clan-sized groups appears to have been a Sapiens specialty, where the archaeological remains suggest enough hunting and tool industry to require many adults, perhaps as many as 30 able adults in n-sized groupings of around 50-100 total. Depending on climactic conditions from 200,000 to 100,000 years ago, human population sizes could grow in locales across eastern and southern Africa where climates and resources were favorable. Just as the clan was conceivable as a "family of families," even higher population levels in certain areas of Africa permitted the formation of the "tribe" as a "family of clans".

When we look around the world today, the oldest human societies among indigenous and aboriginal peoples are all clannish and tribal in nature. They date back to around 60 kya (Australian tribes have such ancestries arriving by way of South Asia) or maybe 80 kya (the Khoe-San and the Hadzabe of southern Africa). Tribal society therefore originated in Africa and was completed by 100 kya, proving so successful that no human group later devolved below that level back to just clans alone. Humans anywhere nowadays can seem "clannish" in subgroups, but larger organizational levels prevail. Our tribal nature is firmly established and any larger scale of society, such as the nation or empire, has to continually manage those tribalistic proclivities in both religion and politics.

Scaling up to tribe-sized societies from clannish groups was a major achievement for humanity at some stage between 150 kya to 80 kya. It wouldn't have happened all at once for all human groups, but those clans able to live in proximity (due to abundant resources in an area) found the advantages to outweigh costs. The major benefit is the amply supply of inquisitive adults able to master various crafts and skills, so that expertise (just one in twenty adults is enough) can be taught to many and expertise can accelerate over many generations because expertise is not lost to forgetfulness or tragedy. Expert mastery was now available within each tribe for the twelve core cultural praxes: family, tribe, trade, games, morals, music, ritual, myth, language, teaching, techne, and art. However, no one could have any knowledge of a common ancestor to so many people, so tribal organization and solidarity required everyone's commitment to some sort of legendary/mythic ancestral origin (e.g. the totemic narrative).

After around 10,000 BCE settlements relying more on cultivation, domestication, and resource storage (the "Neolithic revolution) gathered near ample water resources. No abrupt transition occurred anywhere, because small groups of enterprising harvesters could subsist on a combination of herding and hunting along with seasonal grain cultivation. The domestication of grain annuals (wheat, millet, barley, rice, etc.) permitted groups to grow great quantities of calorie-rich

food. Eventually, year-round cultivation and protection of crops led to permanent villages. By around 6000 BCE and the arrival of the "Copper Age", the life and lifestyle of the agriculture-based village was sharply different from either the clan or tribe living off the landscape, due to rising populations and social segmentation. Segmentation occurs because there are sufficient numbers of people, and enough calories for everyone (in most years) to allow people to specialize in various crafts and occupations.

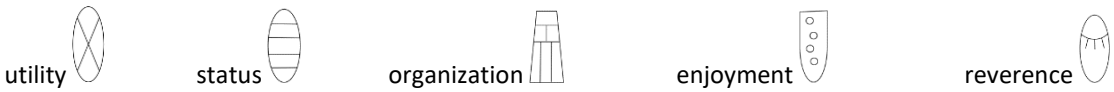
Social *segmentation* at minimum consists of specialization, stratification, and status. Proficiency in basic crafts was nothing new, as a Sapiens universal. Large societies transcended tribal life by fostering expert *specialization*: exclusive and efficient specialization in one craft (or a cluster of crafts) so that surpluses are available for bartering/buying of all other goods and services. With long-term storage, fungible money, and proprietary expertise comes the idea of ownership and exchangeable property. The material foundation of the city and civilization rests on *property* (individual and collective), while their vital grounding lies in *occupation*. Political and spiritual bases to life were similarly transformed by early civilizations.

After specialization and property, then *stratification* arrives, because the distribution of resources around and across society gets less egalitarian and honor-bound and more economic and wealth-bound (reward is proportional to exchange value). Because wealth stratification tends to be both self-reinforcing (wealth is used to acquire more wealth) and often conspicuous (consumption and leisure displayed in public), social *status* is hence practically inevitable. Depending on the society, hierarchical status may adhere more to kinship families, or wealth class, or profession (such as a priestly or military profession), or combinations of such categories. Early city-states placed particular founding cosmic/ancestral deities at the top of their hierarchies to orient civic worship and motivate sacrifice during wartime.

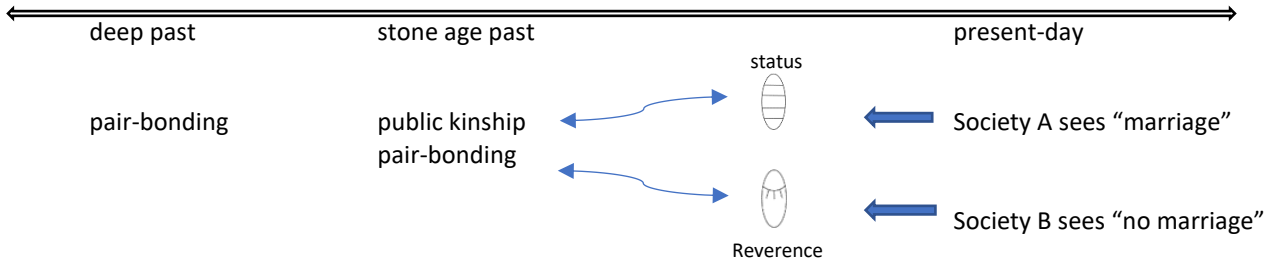
Tribal politics has its customary characteristics in the absence of stratification. Its effectiveness relies on prestige and kinship (actual or imaginary) to promote solidarity and restrain personal power. A large segmented society comes to relies on *state politics*: customs are amended or discarded to legally approve stratification and status, and its powerful authorities enforce *sectors* to ensure productivity from various kinds of labor. Combining coercive custom and legal power yields *caste*: formal and informal regulations sorting people towards certain sorts of occupations, and replenishing economic classes for lifetimes and generations. Tribalism cannot harmonize antagonistic castes and classes (classes themselves retain tribalistic features) so it mutates into a collective pride of *nationalism*.

From within a society, familiar structures serve as ideological *lenses* to judge internal matters positively and external societies negatively.

The five main lenses are:



Ideologies explain why some societies look back to the past and perceive "marriage" while other societies may not. In this case example, both society A and society B are mistaken about Stone Age marriage, which did not exist then. Society A assumes that all pair-bonding must be about status (false). Society B can't perceive marriage (correct) for the wrong reason, expecting religious sanctification.



Concepts applied as theoretical constructions in disciplinary discourse should be carefully defined. However, the social sciences and the humanities have to use terms that are also used in common conversation and ordinary language.

Compare these various constructs that each elaborate on the core idea of “mother”:

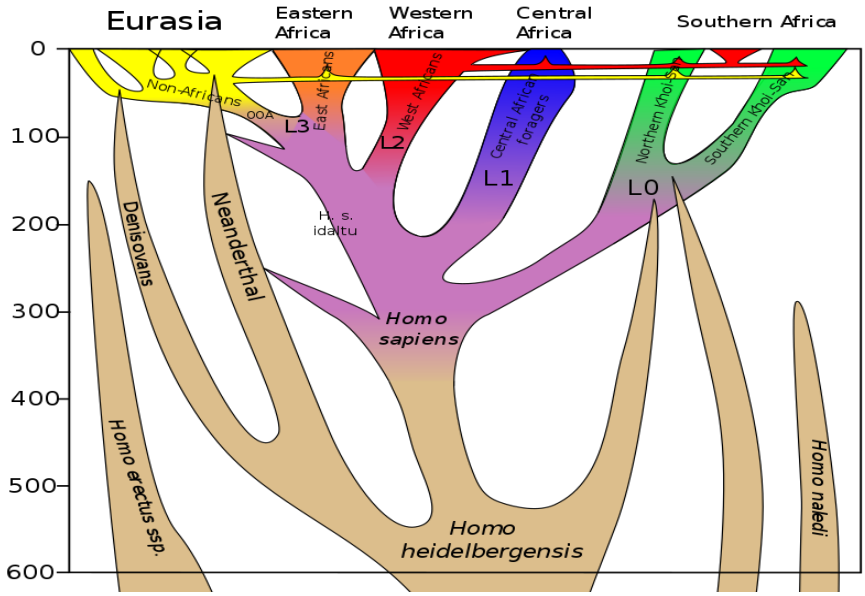
The Construct	Category`	The Purpose	The Lens
perfect Mom	elitist concept	idolize an unreachable ideal	
homemaker	economic concept	lend some financial worth	
housewife	political concept	recognize a domestic civic role	
motherhood	social concept	assign a proper status in society	
mothering	cultural concept	value a stage of a woman’s life	
maternity	anthropological concept	identify a female caretaker	[neutral]

No discipline should uncritically adopt a commonly used word along with its public meaning for its own terminology. Sociology can surely study “the housewife” but sociologists try to neutrally and operationally define that word – and sometimes offer an alternative label too – to gain distance from its popular or prejudiced connotations.

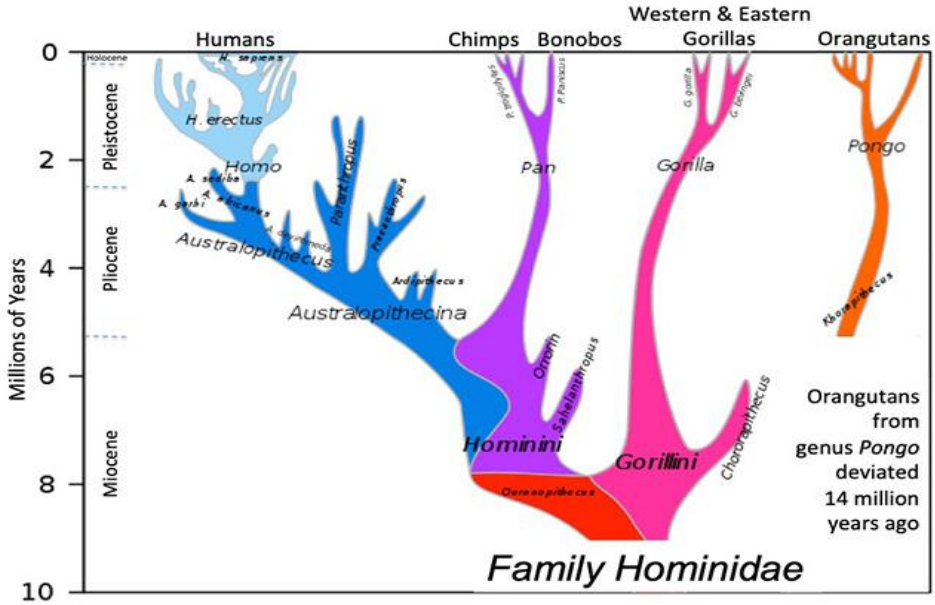
An academic fallacy is committed by disregarding the specific disciplinary construct that assigns precise meaning to a concept. Transporting one theoretical term into quite different domains of life and discourse prevents any valid conclusions from following.

Example of a fallacy: “Culturally, ‘mothering’ typically involves the management of child-rearing and household affairs. But ‘motherhood’ has been an idealized role propping up patriarchy. So, mothers around the world are perpetuating their social domination under patriarchy.”

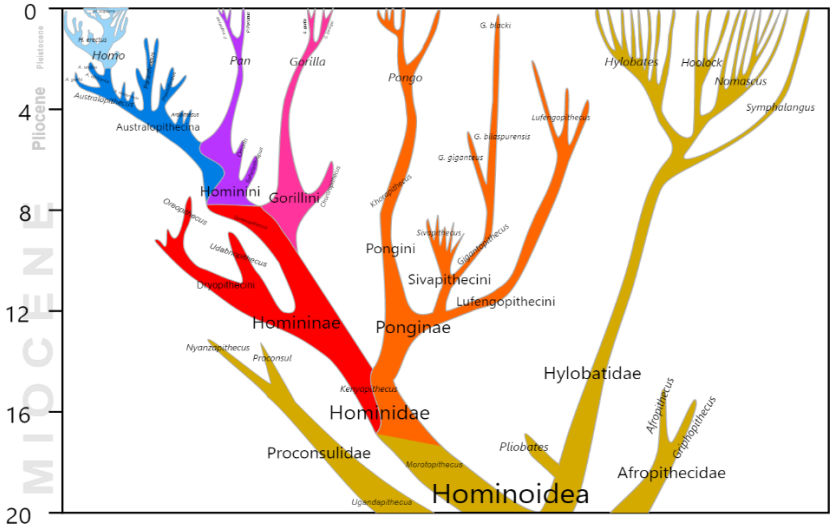
The fallacy is exposed by noting the academic difference between an anthropological term and a political conception, so that concluding generalization about the world’s mothers cannot be deduced in this manner.



Source: kaiserscience.wordpress.com/biology-the-living-environment/classification/classifying-groups-of-humans/



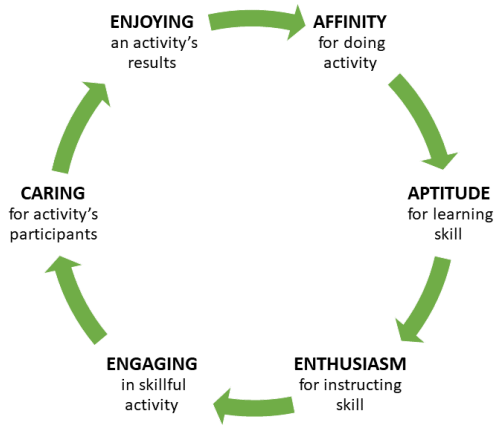
Source: en.wikipedia.org/wiki/File:Hominoidea_lineage.svg



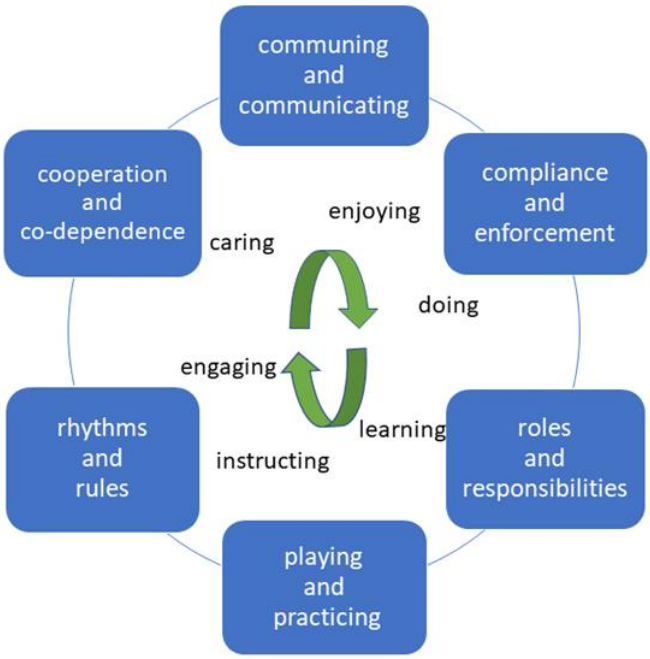
Ape Ancestor 6 mya	**A. Africanus** 3.3-2.1mya	**Homo Habilis** 2.4-1.4mya	**Homo Erectus** 2.0mya–110kya
dimorphism	↓ dimorphism	↓ dimorphism	↓ dimorphism
mothering	mothering	neoteny morphology	↑neoteny morphology
fathering	fathering	mothering	↑mothering
individuality (mirror test)	individuality	alloparenting, female	↑alloparenting, female
grief for death of baby	grief for death of baby	fathering	↑ pair bonding
grief for death of other	grief for death of other	prolonged infancy	↑fathering
2nd order intentionality	2nd order intentionality	juvenilization	grandparenting
emulation	emulation	individuality	caring for the elderly
learning	imitation	grief for death of baby	↑prolonged infancy, childhood
playfulness	action rehearsal	grief for death of another	↑juvenilization
helpfulness	learning	2nd order intentionality	↑individuality
altruism	curiosity	emulation	sense of unique self
reciprocity, direct	playfulness	imitation	grief for death of baby, child
curiosity	helpfulness	guided imitation	grief for death of another
communicative	altruism	action rehearsal	2nd & 3rd order intentionality
mimicry	reciprocity, direct	↑curiosity	emulation & precise imitation
communal	communication	guided learning	↑action rehearsal
competitive	mimicry	action practicing	action practicing
grouping into troops	↑communal	playfulness	teaching and learning
conflict, individual	grouping into troops	playing	↑curiosity, individual & group
conflict, group	competitive	helpfulness	playing, child & adult
planned aggression	conflict, individual	altruism	playing in groups
planned murder	conflict, group	friending	helpfulness & altruism
territorial	planned aggression	reciprocity, direct & delayed	caring for the ill & injured
harvesting	planned murder	mimicry	friending, lifelong
scavenging	territorial	miming	reciprocity, direct & indirect
occasional hunting	harvesting	signaling	signaling, open and secret
tool use, sporadic	scavenging	rhythmic motion	mimicry & miming
	occasional hunting	↑communal	mimesis (gesturing, guttarals)
	↑tool use	grouping into troops	rhythmic activity, group
	using a tool to more tools	coalitions for cooperation	synchronizing group activity
		competitive	band size groups
		conflict, individual	allies for cooperation
		conflict, group	teamwork
		planned aggression	subgrouping into teams
		planned murder	teams lasting for many years
		territorial	3rd party punishing
		harvesting	competition, individual & group
		scavenging	conflict, individual & group
		planned hunting	play-fighting
		exploring	planned aggression
		↑tool use	domination
		using a tool to make another	murder, planned & group
		modifying tools	territoriality
			journeying, by group
			migration
			hunting, by group
			interest in animal behavior
			harvesting, by group
			scavenging
			↑tool dependency
			modifying tools
			refining a tool to make other tool
			tools from bone & wood
			multi-stage tool making

Homo habilis 2.4mya – 1.4mya  Brain size: 620cc	 choppers, cleavers 2.0 million years ago "Oldowan" tools - edged with some bifacing but no symmetry	Social abilities: processing meat skinning animals processing vegetation cooperative hunting imitating other tool makers	Cognitive abilities: understanding views of others monitoring others' skills

The Core Cycle of Techo-Socio Cognition



Homo Erectus "social cognition" (1.8mya – 800kya)

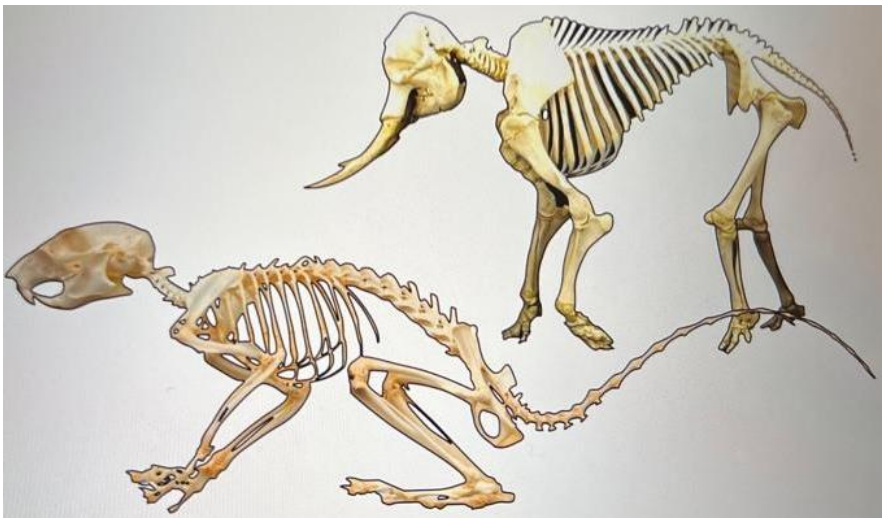


Minding the Brain and What It Does

Ask the question, “How do we Mind what a Human does?” We might answer, “Look at the human’s organic structure.” No, “Observe the human’s bodily actions.” No, “Track the human’s interpersonal interactions.” These are Structure, Function, and System approaches for understanding what a person is doing.

The Structure Approach can explain what happens when a Human acts. But Structure cannot explain why a Human does the action that it is doing. Function can. What the Function approach cannot explain is *how* a Human is capable of performing its activity, but the System approach can explain that. Keep in mind the difference between understanding an Act, an Action, and an Activity. Examples: A wolf can bite through bone, a wolf can track a young deer, and a wolf can hunt in a pack. Good questions such as “Why are wolves carnivores?” or “Why do wolves range over hundreds of kilometers?” or “Why do wolves usually hunt together?” have to be answered by three different approaches. A good explanation of wolf behavior will connect all three sorts of answers.

Studying Structure can provide good clues about Function. Consider how to study an animal from only its skeleton. Posture, gait, and movement can be predicted from long bones, short bones, thin bones, and thick bones. Which animal moved more quickly than the other?



Understanding both Structure and Function can provide helpful information for hypotheses about ways that an animal lived its life hour by hour and day by day. Which animal had to forage at night and make a burrow to defend its young?

Our scientific knowledge of animal brains, with their structures, functionings, and networkings, confirms in many ways a primary theory about brains.

1. Animals are goal-oriented organisms and their nervous systems function to sustain life in various practical ways.

2. Cognition in all its manifestations (intelligence/mind/consciousness) is embodied and not explicable apart from that bodily context.

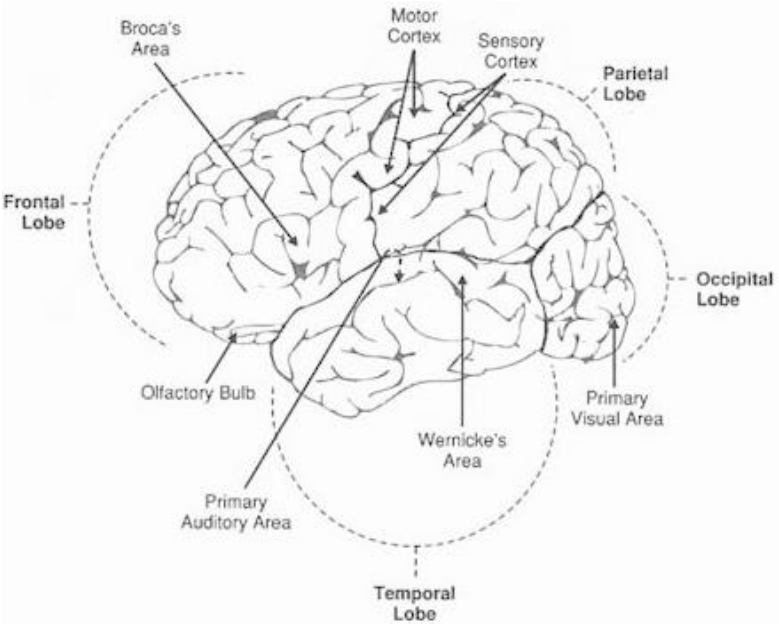
3. Cognitive systems are dynamically adaptive to organism–environment interactions, to deal with shifting conditions of situations as practical goals are pursued.

4. Under pressures from dealing with the environment, the brain modifies its neural connections to improve practical performance. The measure of this neural learning is improved habitual efficiency at specific routine tasks.

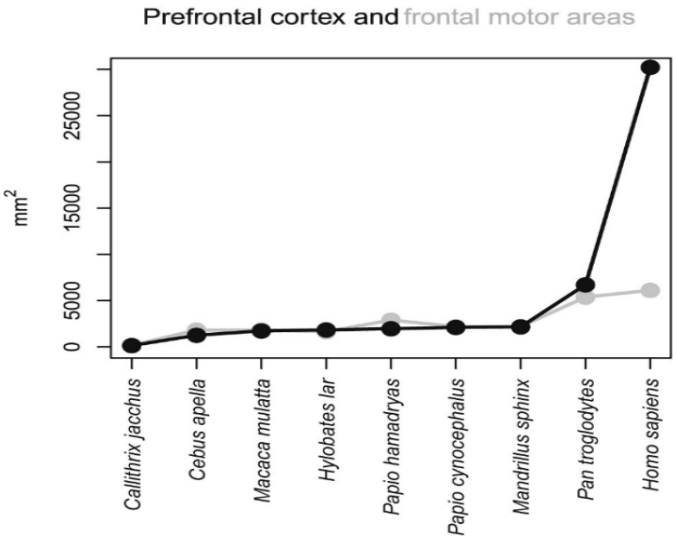
5. Human cognition in all its modes should primarily be studied and comprehended in terms of its practical service for the ways that humans live their daily lives.

Let's apply Structure, Function, and System to the Human Brain.

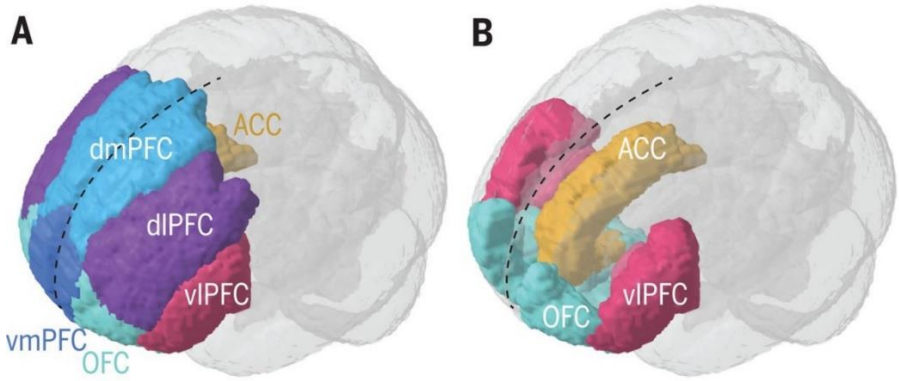
https://www.ncbi.nlm.nih.gov/books/NBK234157/



The Frontal Lobe was the mammalian achievement, getting dramatically enlarged and specialized as mammal evolution headed towards the emergence of primates. Successful mammal species particularly depended on an enlarging Prefrontal Cortex as behaviors became more varied and complex. The Primates have had distinctive prefrontal cortexes, but the Great Apes (including Sapiens) have significantly enlarged PFC areas. The leap after chimps and gorillas went through Homo Habilis (2 million years ago) and Homo Erectus (1 million years ago) and onwards to Homo Sapiens (250 thousand years ago).



[Cebus=Capuchin monkeys, Mandrillus=Mandrill monkeys, Pan Tr.=Chimpanzee]
Smaers, Jeroen B., et al. "Exceptional evolutionary expansion of prefrontal cortex in great apes and humans." *Current Biology* 27.5 (2017): 714-720.



the *dorsomedial prefrontal cortex* (DMPFC)
the *dorsolateral prefrontal cortex* (DLPFC)
the *anterior cingulate cortex* (ACC)
the *ventral prefrontal cortex* (VPFC)
the *orbitofrontal cortex* (OFC)
the *ventrolateral prefrontal cortex* (VLPFC) incl. Broca's language area.

None of these areas accomplish much all by themselves. They are tightly integrated into looping circuits of mutual signalling and constant consultation among each other, and in concert with additional areas contributing to mental flexibility and sociality, such as the paracingulate cortex, dorsal medial prefrontal cortex, dorsal anterior cingulate cortex, superior temporal sulcus, tempo-parietal junction, and so on.

Areas of the Prefrontal Cortex in the Frontal Lobe are mainly responsible for:

anticipating events,
integrating memory with observation,
anticipating future needs,
predicting consequences and rewards,
pausing responses,
planning actions and revising plans,
learning from trials,
managing emotional responses,
maintaining motivations,
practicing actions,
appreciating others' attitudes,
consulting what is believed about others,
listening and speaking with purpose,
weighing preferences and making decisions,
meeting needs of others,
controlling one's conduct,
following norms,

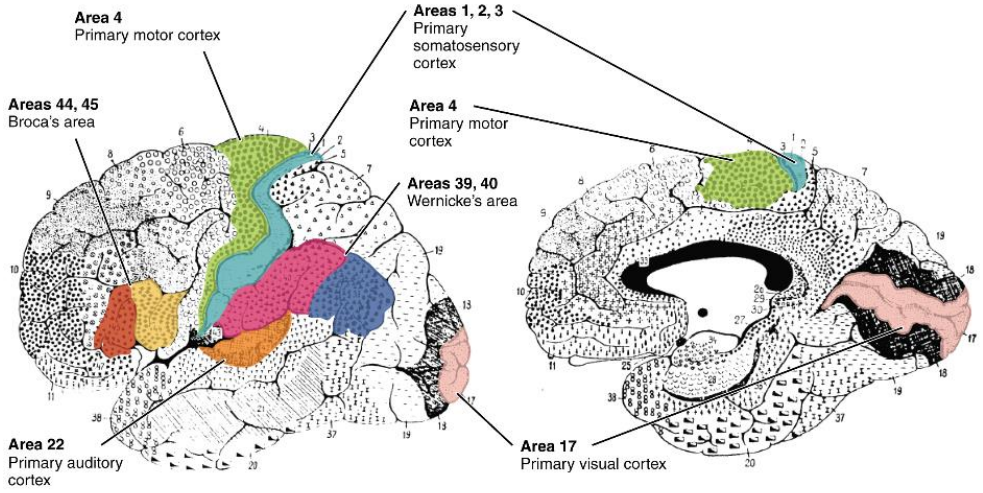
... and similar "higher cognitive functions" and intellectual abilities.

These "executive control," "problem solving," and "good behavior" capabilities are minimally expected of 6 year olds, and the prefrontal cortex continues to develop into the 20s as new synapse formation is prolonged more than in other brain areas.

Minding the Brain: *Structure*, Function, System

Structure: “What the Brain does is about how it is structured.” Brains can be dissected and microscopically examined to reveal visible features of neurons: their shapes and tight connections, their densities, their arrangements and organizations, and the proximities between different areas. Mapping and diagramming the brain’s structure is accomplished with dead brains.

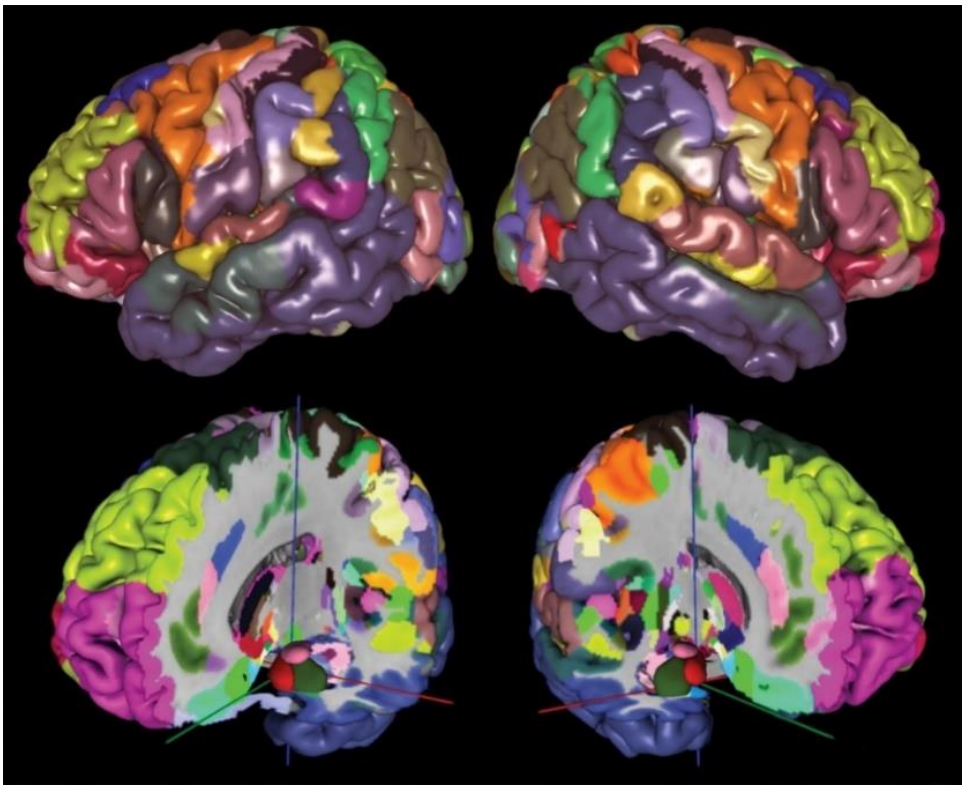
Brodman (1909)



Brodmann's cytotechtonic map (1909): Lateral surface

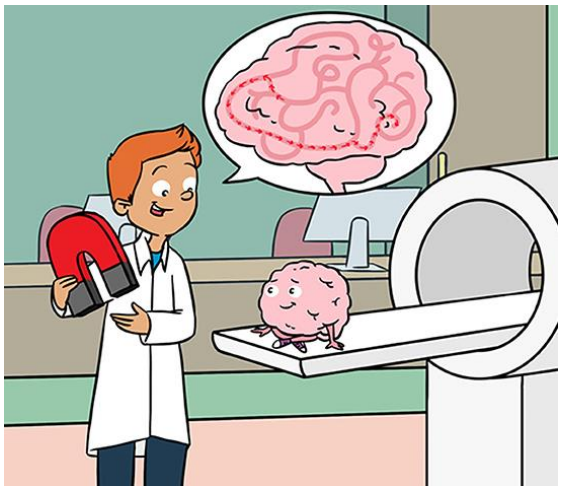
Brodmann's cytotechtonic map (1909): Medial surface

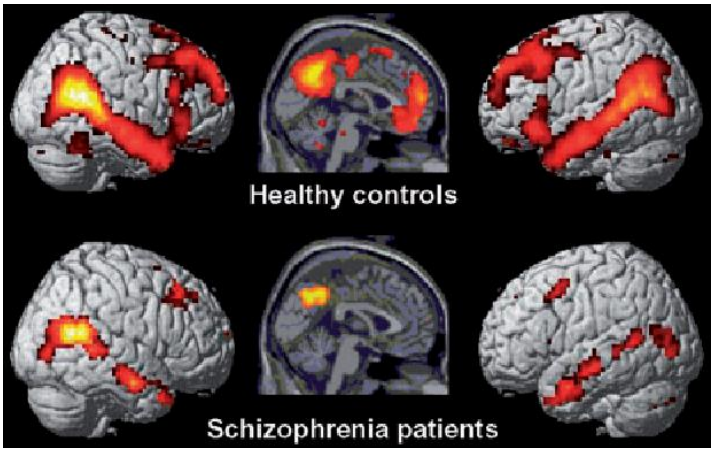
Julich-Brain (2020)



Minding the Brain: Structure, *Function*, System

Function: “What the Brain does is about how it is functioning.” The brain activity of a living brain can be scanned, detected, measured, plotted, and mapped while doing a constrained mental task. Neuroimaging happens in the fMRI machine while the subject follows task instructions to think about this or that (or about nothing). One brain’s activity map, can be compared with other brain maps, and compared against a “neurotypical” average brain from hundreds of brain scans. Tracking the brain’s operations is accomplished with living brains inside unmoving bodies.

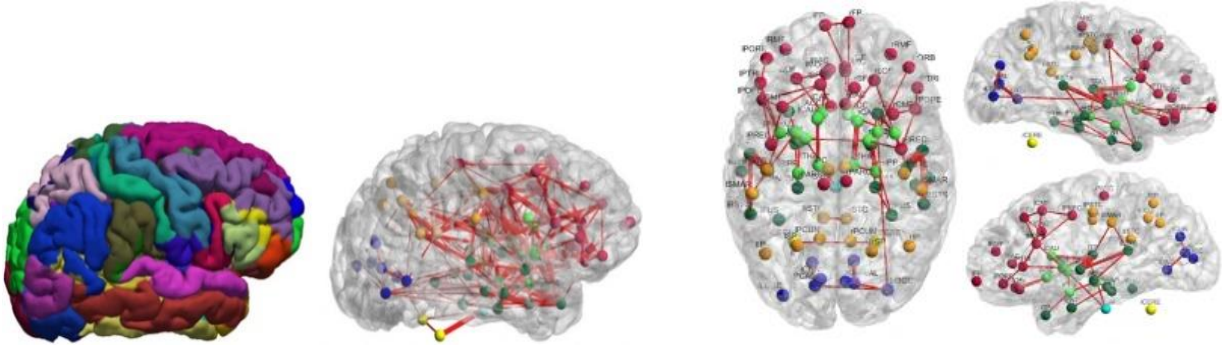




With a detailed and reliable map of the brain’s structure, the places where brain activity changes while doing a mental task must be the brain regions getting used during the task. Behavioral and cognitive neuroscience has built up an impressive model of the brain, based on this kind of empirical evidence.

Minding the Brain: Structure, Function, *System*

Systemic: “What the Brain does is about how it is networking.” Brains can be dissected, mapped, and tracked for patterns of regional activation and activity. The neural “connectome” follows not just the big pipelines but also tracks the kinds of information transmitted and transformed. Which areas have greater interconnectivity, tend to work together, or inhibit other areas? This knowledge gets blended with theoretical knowledge from the behavioral and social sciences, to understand how teamwork among brain regions facilitates behavior. This collaborative research can study the active architecture of living brains inside busy bodies.



Chu, S. H., Parhi, K. K., & Lenglet, C. (2018). Function-specific and enhanced brain structural connectivity mapping via joint modeling of diffusion and functional MRI. *Scientific Reports* 8(1), 4741.

Being systemically wired together across brain regions allows one brain area to do its task better by recruiting information and advice from other regions specialized in other tasks. The brain is not merely "feedforward" from inputs through central processing to output – nor is the brain about "feedback" going back into inputs from initial processing. The brain is mostly about "circulating" information and gathering consent: collecting enough regional consensus to permit decisive choices when coordinated action is needed.

RIGHT: Areas of the brain are typically involved in many kinds of coordinated tasks, often simultaneously.
WRONG: Each part of the brain deals only with its own narrow tasks or specific sorts of representations.

RIGHT: A mental "state" like a belief or emotion flows organically within thoughtful awareness.
WRONG: Perception, emotion, reason, and will are mechanically separate and "cause" one after another.

RIGHT: There is no executive command center giving orders to the rest of the brain to take action.
WRONG: There must be one time and place in the brain where "the choice" occurs to make a decision.

RIGHT: Our conscious and unconscious ideas involve some sort of brain activity somewhere.
WRONG: Finding the "neural substrate" of something mental is enough to "prove" what it really is about.

RIGHT: Anything happening for us mentally involves some sort of brain activity somewhere.
WRONG: Not finding the "neural substrate" of something mental "debunks" it as an illusion or myth.

RIGHT: Cognition happens where a human being is actively dealing with situations and tasks.
WRONG: Cognition happens only inside skulls and within particular regions of the human brain.

RIGHT: The brain has modular architecture, but massive parallel and networked processing is dominant.
WRONG: There is an inner theater where all information is gathered and simultaneously experienced.

Minding the Brain: Structure + Function + System for *Collaboration*

Humans are not only social by nature, we are hyper-social. We are so entirely dependent on group collaboration that virtually everything we care about, think about, plan towards, and hope for, always involves other people and our relationships. Human brains are systemically constructed because human mentality is thoughtfully networked.

Even the way that a person decides to get "anti-social" remains supremely social: "how can I deceive or damage others?" or "how can I sabotage or steal from others" and so on, reveal a social mind thinking socially about social aims and needs of others. The anti-social personality is more obsessed with social matters than most people.

The human brain is constructed for minding Humanity: planning cooperative participation for social goals and societal roles. The Human Mind is Social Mind. We only know how to be social, as part of Humanity.

Human Morphology, Physiology, Key Behaviors

Traits on this list are *generically pervasive* for Homo Sapiens as a whole.

Bipedalism	Large brain	Whites of eyes are more visible
Modest male-female dimorphism	Large prefrontal cortex	Eye colors
Longer-term pair bonding	Brain laterality (right for language)	Many facial expressions
Courting behaviors	Enlarged prefrontal cortex	Surprise expression
Moderate monogamy	Enhanced neuronal density	Disgust reaction
Occasional polygamy	Enhanced neuron myelination	Contagious yawning
Extended kinship bonds	Juvenilization of facial features	Crying with tears, child and adult
Matrilineal and patrilineal descent	Good binocular discrimination	Empathetic crying
Both matriarchy and patriarchy	Moderate night vision	Laughing, contagious laughter
Exogamy, mainly females	Good trichromat color vision	Smiling, group smiling
Incest aversion	Some tetrachromacy vision	Kissing, among kin, for attachment
No baculum (penis bone)	Poor sensory olfaction	Baby tracking of friendly faces
Concealed ovulation	Smaller molars	Infant babbling
Private copulation	Shorter incisors, no fangs	Infant tracks helping behavior
Wide female hips	Strong flexible wrist	Infant giving behaviors
Breasts high on chest	Hand dexterity	Developed larynx, vocal cords
Monthly menstruation	Handedness (usually right hand)	Mimetic (guttural-gestural) language
Nine-month pregnancy	Tool usage	Speech with 4th order intentionality
Frequent birth rate (~ 2 year gaps)	Tool use for different tasks	Overt and covert messaging
Infant crying	Tool sharing	Sympathetic giving and sharing
High responsiveness to infant crying	Tool improvement	Lasting childhood friendships
Infancy swimming reflex	Shoulder built for throwing	Strong attachments to animals
Prolonged infancy, childhood	Throwing projectiles	High discriminations among plants
Fathers ~7 years older than mothers	Lumbar curvature	Highly omnivorous, incl. scavenging
Mother and father care	Long distance running	Teamwork hunting
Alloparenting	Subcutaneous fat on 100% of body	Teamwork foraging
Lasting parental attachment	High capacity for fat storage	Spelunking proficiency
Grandparent care	Little body hair exc. head, pits, groin	Swimming proficiency
Caretaking for elderly	Less body hair on females	Eats freshwater foods
Shaming and guilt, humiliation	Hair-raising frisson response	Eats marine foods
Showing regret, remorse	Density of sweat glands over body	Eats cooked foods
Grieving over offspring death	Dominant big toe	Public meal eating
Grieving for kin death	Shorter intestines	Food sharing
		Food distribution

More Complex Behaviors and Practices

We are looking back into 4 million years of hominid evolution, for clues about basic human propensities, proficiencies, and proclivities in complex behaviors. A high degree of propensity, proficiency, and proclivity with an activity is a reliable indication that doing that behavior was an adaptation for the entire species, so it is part of “human nature” or at least a “cultural generic”. A "propensity for X" means that all (or almost all) humans do activity X when opportunity allows. A "proficiency with X" means that all humans are cognitively prepared for becoming skilled in activity X. A "proclivity for X" means that all humans are usually enthusiastic about participating in X and ensuring that next generations do X too.

Propensity (P1) can be objectively measured by observing humanity to know what percentage (from 0% to 100%) of humans across all societies do an activity (if not daily, at least regularly). Proficiency (P2) can be objectively measured by assessing the usual age (from 1 year old to 20 years old) when a typical human could become skilled in an activity (assuming guidance from older humans, if necessary). Proclivity (P3) can be objectively measured by evaluating the enthusiasm (from very low to very high) shown by humans for doing X and ensuring that next generations enjoy X too.

To combine these three factors for reaching a total “human nature” P-Score, they could be added up as (P1+P2+P3) using a 1 to 10 scale for each factor so that maximum score is 30. EG for propensity, assign 1 for 10% of humanity, up to 10 for 100% of humanity. For proficiency, assign 1 for 19-20 years old, 2 for 17-18 years, 3 for 15-16 years old, up to 10 for 1-2 years old. For proclivity, assign 1 for “very low enthusiasm” up to 10 for “very high enthusiasm” (but only award a 9 if humans expect custom/law to protect the right to do it, and only give a 10 if humans would resort to violence if prevented from doing that activity or teaching it to youth). Cultural Generics would be expected to have high P-Scores, at least 22 and over.

Homo lineage species:	Tools:	Social abilities:	Cognitive abilities:
Australopithecus • 4,000,000 years ago–2,000,000 years ago • Brain size: 380–430cc	• "Lomekwian" choppers, edged without bifacing or symmetry	• Butchering carcasses • Hacking vegetation • Imitating other tool users	• Monitoring behavior of others • Direct reciprocity • Nothing artistic or symbolic
Homo Habilis • 2,400,000 years ago–1,500,000 years ago • Brain size: around 620cc	• "Oldowan" choppers and cleavers, edged with some bifacing but no symmetry	• Processing meat • Skinning animals • Processing vegetation • Cooperative hunting • Imitating other tool makers	• Understanding habits of others • Indirect reciprocity • Monitoring others' skills
Homo Erectus • 2,000,000 years ago–100,000 years ago • Brain size: 850–1100cc	• Early "Acheulian" choppers and cleavers, bifaced with some symmetry	• Teamwork and group practices • Morality enforcement • Hunting with tools • Processing animal skins • Control of fire • High group mobility	• Understanding plans of others • Learning from experiment • Monitoring others' ideas about oneself • Maintaining one's reputation
Homo Heidelbergensis • 700,000 years ago–300,000 years ago • Brain size: 1200cc	• Better "Acheulian" stone tools, smaller and bifaced with symmetry and harmonious design	• Life-long cooperation • Morality enforcement • Instruction of young • Specialized skills • Musicality • Etching and simple artistry	• Understanding intents of others • Mimetic language • Learning from instruction • Simple symbols • Disposal of the dead
Homo Neanderthalensis • 450,000 years ago–40,000 years ago • Brain size: 1500cc	• Late "Acheulian" stone tools, having ample symmetry and harmonious design	• Titualized performance • Specialized skills • Instruction of all young • Cooperative tool-making • Clothing, sheltering	• Anticipating intentions of others • Complex mimetic language • Singing, artistry, and cave painting • Burial of the dead
Homo Sapiens • 250,000 years ago–present • Brain size: 1300–1400cc	• A large variety of stone, bone, and wood implements, some requiring parts and assembly	• Advanced foraging and hunting • Life-long skill specialization • Education of all young • Group projects and complex rituals • Social roles and tribalism	• Understanding beliefs of others • Fully grammatical speech • Internalization of social roles • Spiritual/religious symbolism • Decorative and representational art

Cultural Generics by around 100kya – The Twelve "Symbolic Spheres"

KIN
classification by sex
classification by sexual preference
classification by kin relation
visitation of kin household
kin role for a lifestage
kin role for a lifetime
division of labor by age
division of labor by sex
mostly mothering of infants
mothering of daughters
fathering of sons
respect for deceased kin

TRIBE
classification by age
rites of passage, celebrations
solidarity, loyalty to in-group
customs for roles and duties
customs for rituals
group planning, decisions
group journeying
deference to elders
extended kinship to clan
extending clanship to animals
totemic bond with animal symbol
tribalism
territoriality, defensive & aggressive
male show-fighting
male combat, to lethality
male group combat, to lethality

TRADE
male hunting, sharing meat
skill specialization
teamwork industry
attachment to possessions
property, individual & group
making things for another's use
trading, in-group and out-group
trade fairness
production for trading
produced goods put in storage
objects as an exchange medium

GAME
group play
child games (like tag)
toys
games with a ball
games of chance (with dice, tops, etc)
adults play games
athletic competition
sport with goals, rules
sport around objects (ball, bounds, etc)
sport contest between teams
sport with spectators

MORALS
generic generosity
mutual gift exchange
group feasting
etiquette customs
hospitality, including strangers
habitual hygiene
affection towards any baby
compulsion to protect children
compulsion to protect mothers
sanctions for misdeeds
sanctions for unfairness
sanctions for harming group interests
third-party punishment
ostracism, banishment

MUSIC
group rhythmic activity
musical inventiveness
instruments for music
singing familiar songs
dancing familiar dances
group participation in song/dance
group song-dance for cathartic relief
formulaic for reconciliation
formulaic dance for reconciliation
formalized song-dance for solidarity

MYST-MAGIC-MYTH
dream interpretation
trancing, trance interpretation
mystic episodes for anxiety relief
animals attributed with mentality
3-fold ontology: thing, animal, person
knowledge of death
spirit survival after death
spirits-ghosts lingering on earth
sacred/mundane distinction
sacred rituals
predicting the future, fate
magic, sacrificial
magic, healing
beliefs about higher powers
beliefs about world origin
beliefs about human origin

RITUAL
mimicking animal behaviors
predicting animal behaviors
acting out human activities
play-acting for plan preparation
pantomime for entertainment
role acting for dramatic reenactment
rituals for greeting another
rituals for special occasions
burial of corpses, grave goods
rituals for the ancestors

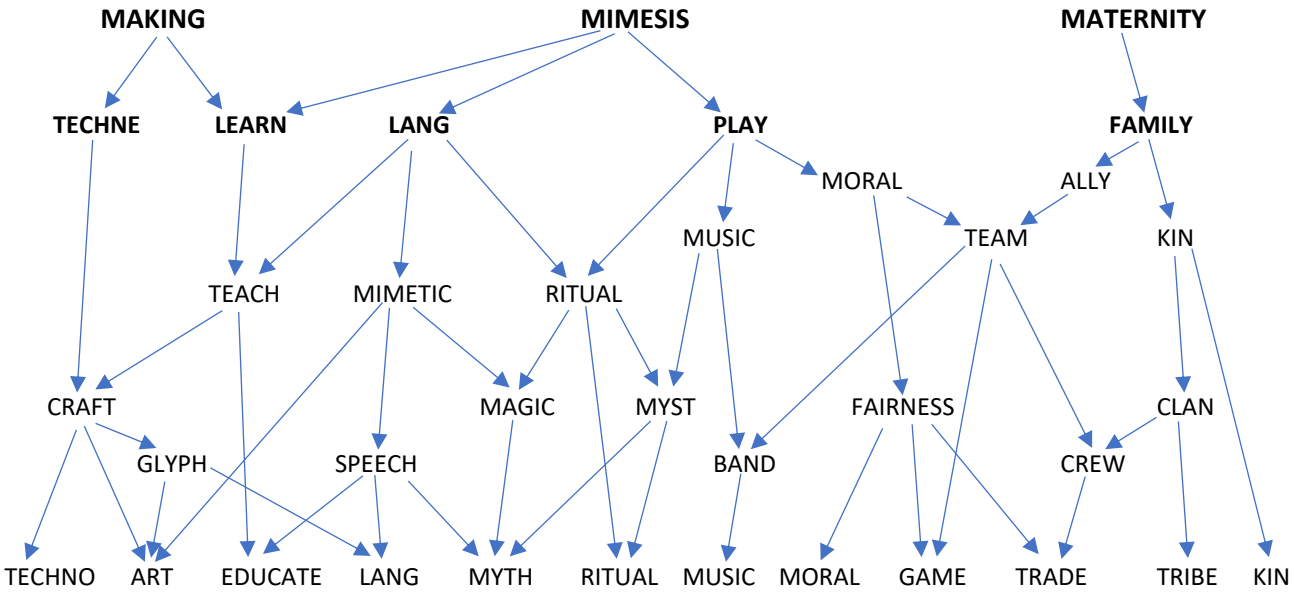
LANGUAGE
mimesis and syntactic speech
measurement units based on body parts
words for 1, 2, 3, many
words for white, black, red
words for green-blue, yellow-orange
names for each individual
naming of places
mimetic re-enactment
gossip
narration for entertainment
narrative fables, tales
narration about the past, legend
renditions conveying information, lore

EDUCATION
roles for teacher and learner
non-kin as teachers
narration for instruction
discourse for instruction
standardized instruction
expert instruction to youth
lifelong practice in skills
mastery level accomplishment
imitation of mastery in a practice
status recognition for mastery
experts collaborating their mastery

TECHNOS
multi-stage fabrication
stone hand-axe, small blade
spear, spear with blade tip
bow and arrow
the lever
twining, knotting (for rope, netting, etc)
needle
clothing (for warmth, modesty)
shelter, movable and permanent
fire control, hearth
cooking recipes
medicinals
taming animals
seasonal tracking of animals

ART
preference for symmetry, harmony
preference for beauty
collecting objects of beauty
aesthetic styling beyond function
coloration on objects
decoration of the body, tattooing
styling of head hair
decoration of objects
objects created for beauty
jewelry (beading, necklace, etc)
graphics marked on environs
iconic symbols

The Anthropos Praxes: Techne, Learning, Language, Play, Family



The top row of Making, Mimesis, and Maternity was the inheritance from Australopithecus around 4mya.

The essential kinship of mimetic language and playful acts accounts for the enormous flexibility to human signaling, going infinitely beyond primate capacities for vocal signs. Only Homo babies enjoy babbling and then bestowing unique names on innumerable things with adult guidance. That permits symbolization embodied in vocalizing, gesturing, and making. Those Homo capacities long pre-date discursive speech.

The second row – Techne, Learn, Lang, Play, Family – constitutes the H. Habilis achievement around 2mya.
By 1mya, H. Erectus had Tool Improvement, Teaching, Mimetic language, some Music, some Ritual, basic Morals, Teams, and Kin.

The bottom row of capabilities, in place by 100kya for H. Sapiens, are the twelve “forms of life”. They together constitute Human Culture = **HUMANITY**.

The 12 forms of life can be understood as:

(1) shared group practices = “Cultural Praxes”
(2) experienced meaningful fields = “Symbolic Spheres”
(3) engaged social cognition = “Social Dimensions”

Human Being Human

> "The symbol-using (symbol-making, symbol-misusing) animal, inventor of the negative (or moralized by the negative), separated from his natural condition by instruments of his own making, goaded by the spirit of hierarchy (or moved by the sense of order), and rotten with perfection."
> – "Definition of Man," Kenneth Burke, 1963

H. Erectus was probable the first to start combining cultural practices to greater and lasting effect. Groups relying on those complex practices survived better, so group selection accelerated as less sophisticated groups were at a reproductive disadvantage. Groups that were regularly able to mimetically teach tooling, for example, were more productive together. It is no coincidence then that conveying best practices with some standardization are regimented and ritualistic, and look much like collaborate teamwork.

H. Heidelbergensis by 600kya had proficiencies with Crafting, Teaching, Mimetic 'talk', Ritualization, Teamwork, and Clannishness. They were also experimenting with glyphs (significant marking), bands, and crews to conduct joint practices.

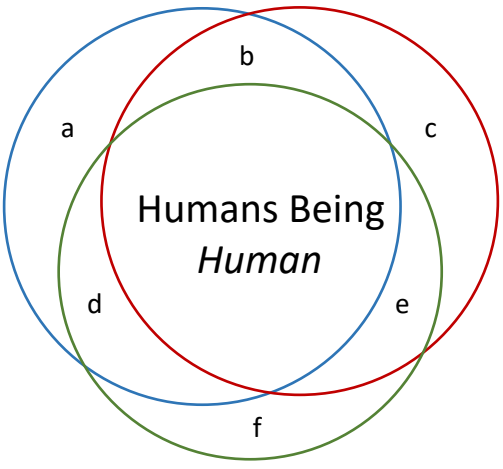
The human being is hard enough to essentialize given the way that Homo Sapiens resulted from bio-cultural co-evolution. Human culture itself evolved right along with Homo physiological and neurological development. Having human DNA and a human morphology – an organic being that is human – is insufficient to define what being human is all about.

Ask the question, "What is it about a human being that makes it particular Human?" We might answer, "Look at the human's organic structure." No, "Observe the human's bodily actions." No, "Track the human's interpersonal interactions." These are Structure, Function, and System approaches for understanding what being human is really about. The Structure Approach can explain what happens when a Human acts. But Structure cannot explain why a Human does the action that it is doing. Function can. What the Function approach cannot explain is how a Human is capable of performing its activity, but the System approach can explain that. Keep in mind the difference between understanding an Act, an Action, and an Activity.

The Biology of a human supplies its "blueprint" for growing the human structure. That structure can then function as Morphology in the performance of a wide variety of human actions. Those activities serve human purposes with Teleology to advance the kinds of lives fitting the human being. The proper end or purpose of a Homo Sapiens is participation in Humanity. To be fully Human (a biological category) is to be among Humanity (a spiritual category).

MORPHOLOGY

behavioral capabilities



TELEOLOGY

humanity praxes

genetic
inheritances

BIOLOGY

Area a = human-ish (e.g. ape) by sharing bodily commonalities with humans
Area b = human-like (e.g. android) by embodying some human practices
Area c = anthropomorphic (e.g. angel, AI, alien) by exhibiting some praxes akin to humanity
Area d = human life (e.g. newborn, comatose) by having a human body w/o much mentality
Area e = transhuman (e.g. radically evolved) by evolving away from Sapiens morphology
Area f = human embryonic (e.g. early fetus) by developing only to a pre-cortical state

The Evolution of Morality and Cultural Spheres of Life

There is a natural history of morality for all of humanity, going back to Homo Erectus a million years ago as morality's evolution accelerated.

Morality's natural evolution added moral capacities, from a million years ago down to twenty thousand years ago. Morality had to develop, as the group sizes grew and cultural spheres enlarged.

KINSHIP GROUPS	**PRIMARY SOCIAL BONDS**
Families: 8 to 15 individuals.	Capacities: Kinship altruism. Emotions: Love, sympathy, compassion. Social mechanisms: Family upbringing.
Bands: Closely interrelated families, up to about 50 individuals.	Capacities: Kinship altruism, direct reciprocity. Emotions: Sympathy, compassion, trust. Social mechanisms: Family upbringing, civility norms of not harming conspecifics.
Clans: Several distantly interrelated families, as many as 150 individuals or more.	Capacities: Kinship altruism, direct reciprocity among familiars, indirect reciprocity with relative strangers. Emotions: Trust, respect to conspecifics, artificial kinship bonds through mythical ancestors. Social mechanisms: norms of civility to all clan members, norms of morality promoting cooperation and preventing harms among clan members.
Tribes: Clans on a much larger scale; 200 to 500 individuals before Neolithic revolution, over 500 individuals afterwards.	Capacities: Stable social roles, fidelity to tribal identity. Emotions: Trust, civility, social duty, artificial cultural bonds through mythical ancestors and religious cosmogonies. Social mechanisms: responsibilities of social roles for regular cooperation, norms of civility and morality towards all tribe members, hierarchical power structures for enforcing norms.
Nations: Very large tribes or aggregates of tribes sharing a culture; many thousands or hundreds of thousands of individuals. Modern nations can number in the millions.	Capacities: Stable social roles, class distinctions, fidelity to national identity, obedience to law. Emotions: Trust, civil etiquette, social duty, artificial cultural bonds through religious and national narratives. Social mechanisms: responsibilities of social roles for regular cooperation, norms of civility and morality towards all national members, hierarchical power structures enforcing national laws.
Empires: Aggregates of large tribes and/or nations; no upper limit to size.	Capacities: Stable social roles, class distinctions, fidelity to empire and citizenship identity, obedience to law. Emotions: Trust, civil etiquette, social duty, artificial cultural bonds through religious/empire/humanity narratives. Social mechanisms: responsibilities of social roles for regular cooperation, norms of civility and morality towards all peoples, hierarchical power structures for enforcing laws, notions of abstract ethical principles valid for all humanity, use of empire power to enforce universal moral and political norms

Current moral psychology has explored the moral values that motivate right behavior all around the world in every society. Jonathan Haidt, for example, empirically discovered six "moral foundations" in humanity's common psychology and cognitive capacity that are responsible for the different kinds of ways that our activities follow the normativity of morality. [Graham, J., Haidt, J., Koleva, S., Motyl, M., Iyer, R., Wojcik, S. P., & Ditto, P. H. (2013). "Moral foundations theory: The pragmatic validity of moral pluralism." In Advances in Experimental Social Psychology (Academic Press), vol. 47, pp. 55-130.] See J. Haidt, http://moralfoundations.org/

Other researchers, applying these operational criteria, have found more nuanced moral foundations similar to Haidt's. Oliver Curry at Oxford University has recently announced seven moral foundations. [See http://behavioralscientist.org/whats-wrong-with-moral-foundations-theory-and-how-to-get-moral-psychology-right/ See also: Curry, O. S., Jones Chesters, M., & Van Lissa, C. J. (2019). "Mapping morality with a compass: Testing the theory of 'morality-as-cooperation' with a new questionnaire." *Journal of Research in Personality* 78: 106-124.]

The foundations of Haidt and Curry, alongside other kinds of research into the evolutionary history of moral thinking, can be combined for even more comprehensiveness. After eliminating duplication, we arrive at twelve foundations to what humanity regards as morality, listed in the probably order of their evolutionary development. Each moral foundation involves normative moral practices, that carry real consequences for violating them.

(1) Aid Family. The duty to fulfill the emotion of loving concern, by caring for and protecting close kin. This moral capacity requires the empathetic ability to sustain loving attachments to those that one grows up with. Violating this duty can lead to other kin deciding to abandon the unloving individual. This moral capacity is needed for sustaining the symbolic sphere of *Family*.

(2) Don't Harm. The duty to avoid bodily hurt or mental harm to others without good reason, where reasonable excuses for harm are heeding other items on this list. This moral capacity requires the sympathetically ability to understand another's suffering. Unnecessarily harming others can cause immediate retribution (second-party punishment) and/or group avoidance. After third-order intentionality develops, third-party punishment is in place within the group. This moral capacity is needed for sustaining the symbolic sphere of *Play*.

(3) Do Reciprocal Good. The responsibility to cooperate with others who are cooperating with you, instead of selfishly doing what seems best for yourself right now. This moral capacity requires the ability to sympathetically understand another's welfare and value familiar friends. Direct reciprocity is sufficient for this moral capacity, although it is enhanced after indirect reciprocity becomes possible with third-order intentionality. If someone can't be a good cooperator, others learn to avoid engaging with that individual (ostracism). This moral capacity is the basis for sustaining the symbolic sphere of *Ally*.

(4) Be Compassionate. The propensity to feel empathetic with another's feelings is evidently powerful when another is undergoing suffering and fear. Beyond the compulsion to take care of family, and the urge to protect any infant, there is a moral motive to generously assist anyone truly vulnerable and in need of help. Unlike reciprocal good where future recompense is expected, and unlike fair distribution where merit sets proper portions, compassionate caregiving simply provides assistance to improve someone else's situation without thought of compensation for oneself. This moral capacity supports a variety of symbolic spheres but gets especially expressed in *Morality* itself, along with *Teaching*.

(5) Be Fair. The good results of cooperation should be apportioned among participants in proportion to their respective contributions to the endeavor. Each individual only wants and takes what is fairly theirs from a cooperative engagement, such as a trade bargain or a group undertaking. Small-group competition is a form of cooperation too, such as competition among hunting parties or among athletic teams, so "playing fair" is essential. This moral capacity requires third-order intentionality and the ability for each individual to care about

how others assess one's own reputation for being fair instead of trying to cheat. Violations of fairness can include punishment and/or exclusion from future cooperation and trading. This moral capacity is the basis for sustaining the symbolic sphere of *Team*.

(6) Respect Property. The goods that one acquires from one's own effort, along with cooperative goods already apportioned out fairly, must be acknowledged by the whole group as belonging to that individual, and this ownership allows individuals to consume or trade their possessions as they like (consistent with 3 and 4). This moral capacity requires third-order intentionality, the ability to keep what is one's own within their possession (rather than forget or lose things), and the ability for each individual to remember how others get very attached to their possessions. Violations of property may be excusable if (1) or (2) is at stake, but otherwise the act of stealing will be punished. This moral capacity is the basis for sustaining the symbolic sphere of *Trade*.

(7) Be Loyal. The band, especially as group size enlarges towards a clan, requires consistent niceness (2), cooperation (3), fairness (4), respect for property (5), and respect for skill mastery among all members, so that devotion to the group's needs and goals usually takes priority over merely selfish wants. This moral capacity requires the beginnings of fourth-order intentionality, so that each individual can understand how their personal self is more about what the group thinks of them (the superego) rather than how one prefers to think of themselves (the ego). Putting one's own interests first will be viewed by others as a betrayal of trust, causing them to inflict punishment or ostracization, and perhaps permanent banishment. This moral capacity is the basis for sustaining the symbolic sphere of *Ritual*.

(8) Admire Heroism. Those who bravely sacrifice themselves for others merit approval, status elevation, and reward from the rest of the group. Going above and beyond the loving, altruism, and fairness of other moral duties, an individual may voluntarily undertake extraordinary risks and harms for the welfare of others or the whole group. Saving lives (especially babies and children) in danger, hunting animals, scouting out the unexplored, or fighting with another clan are examples of opportunities for heroic self-sacrifice. Sport competition is an analogous opportunity for heroism in miniature. Failing to be courageous when needed, or refusing to acknowledge the heroism of others, is treated as shameful and disreputable, lowering one's status in the eyes of everyone. This moral capacity is the basis for sustaining the symbolic sphere of *Sport*.

(9) Obey Authority. Between family, clan, and masters of expertise, there are leaders who expect deference and obedience to their rightful authority (acquired by proven mastery or heroism) over how things should be done and who should do them. This moral capacity requires the developed distinction between the ego (of childhood) and the superego (of adulthood). As mimetic language develops, communicating rules, traditions, and customs then becomes the easier way to authoritatively instill obedient conformity rather than just learning from a leader by imitation or close direction. The moral expectation of sincerity and honesty in communications, rather than deception and lying, is grounded here. Dishonor and loss of legitimate status comes to leaders abusing authority or caught in dishonesty. Violations of legitimate authority are communally viewed as subversive and treacherous towards both leadership and the whole group, to be punishable by retribution, ostracization, banishment, and perhaps execution. This moral capacity is the basis for sustaining the symbolic sphere of *Tribe*.

(10) Venerate Sanctity. Follow the traditions, customs and rituals about what is sacred and taboo, to avoid degrading oneself below human status and dignity. This moral capacity is a re-purposing of an older fundamental norm of cleanliness, which originally was the family responsibility of parenting and lacked a moral dimension. Once the disgust intuition is in place (usually by age six), later childhood and early adulthood is an opportunity to instill reverence (through appeals to loyalty, heroism, and authority) for whatever the whole group regards with sanctity. The value of sanctity itself has a different origin apart from morality: the symbolic sphere of the Mystic/Mythic orient individuals to what is supremely powerful and important (the sacred) for all human existence. To reinforce customary reverence and piety towards the sacred among everyone, rituals and narratives about moral duty towards the sacred (requiring fully grammatical language) are recruited to ensure adulthood respect for sanctity, although duties to the sacred get elevated above moral duties to humans. Violating sanctity is

the most horrific terrible crime imaginable, demanding vengeance, banishment, and perhaps execution. This moral capacity is the basis for sustaining the symbolic sphere of *Religion*.

(11) Appreciate Autonomy. The value of autonomy for most everyone (except the young and most vulnerable) arose to counterbalance the conformities of excessive tribalism or intense nationalism. As Tribe developed further and enlarged towards the Nation (of perhaps 100k up to over a million individuals), adult individuals needed to be able to uphold a sense of dignified self-respect based on the mutual respect shared among the whole community. This moral capacity relies on fourth-order intentionality to permit adults to appreciate how everyone else's autonomy enhances one's own effective autonomy. There should be toleration and permission for a high degree of autonomy by adults over their own families, life choices, lifestyles, residencies, occupations, dispositions of property, and so on. This moral capacity is the basis for advancing several symbolic spheres, notably encouraging toleration among Religions and and opening up Trade to market economics.

(12) Respect Liberty. This moral capacity also requires fourth-order and perhaps fifth-order intentionality, so that one's strong sense of superego can take the perspective of the whole group as it stands over and against not just one's own life, but the life of any other adult individual. We each have to answer to rightful authority, but standing up for anyone's unjust degradation or servility takes a moral stand for human liberty. By appreciating how individuals can be unjustly controlled, dominated, and oppressed by the whole tribe or nation despite its legitimate authority, the power of the Whole can be rightly balanced against the self-rule of the One. An inability to appreciate how others are unjustly dominated is a kind of moral blindness and inhumanity that leads to one's participation in great evil, and possibly one's own enslavement next. This moral capacity is the basis for replacing *Tribe* with the symbolic sphere of *Politics*.

What would "Moral Objectivity" be like? Moral judgments are conventional yet objectively binding. The false dichotomy between norms that are merely subjectively conventional and those that are objectively valid does not apply in the moral realm and must have some other source. In a sense, the morality of adults is culturally conventional because only cultures supply the social projects and social roles that call for morality. Basic morality and virtue is pretty much universal, but much of adult morality can vary widely across cultures. The notion that there naturally is but one culture that gets morality completely right is long longer acceptable. However, adults raised in a culture do not regard their norms of morality as merely conventional, since they are thoroughly habituated into those norms. No one regards local moral norms as simply "up to them" as if personal whim dictated them and people can transgress or change them as they please. Within a society, we hold each other to objective moral norms that have standing independently of any of us, and we do not regard them as easily modifiable, if at all. **Morality is what may be called *culturally objective***: morality is dependent on and relative to the functioning of cultures, and the proper functioning of a culture produces adults who regard their moral norms as objectively binding. The notion that this is an irrational perspective, because it inconsistently regards moral norms as simultaneously relative and objective, must have some other source beyond morality.

In summary, Morality is Embodied, Situated, Role-embedded, Habitual, Cooperative, and Culturally Objective.

Human are capable of morality because we use social cognition and collective intentionality to actively control and manage ongoing modes of social interactions. Morality does not operate at the simpler level of control of ongoing social interactions – we have innumerable simple social habits for engaging with others in cooperative projects or just casual interactions. Morality operates at the higher level of control of control – the supervisory management of how well we are coordinating our social interactions. Morality helps to regulate social performance over long stretches of time.

Morality for Complex Sociality

After the Neolithic Revolution, as tribes became nations and then empires, the intense social pressures aroused by the close proximity of peoples having different cultures and social role expectations demanded that morality

itself become an object of reflective scrutiny. The notion that morality must be extendable beyond the domains of clan and tribe emerged in early human civilizations.

Morality is not enough for culturally pluralistic societies. As nations developed laws that apply to all citizens regardless of social role or tribal origin, the notion gradually arose that there are truly universal principles of abstract right applicable to all humanity.

The Axial Age (roughly 800BC to 200BC) and its obsession with universally human principles and some way to ontologically ground those principles in reality is a manifestation of this urgent need to surpass the social limitations to ordinary morality.

Today, common social morality and high cultural ethics uneasily co-exist. The Enlightenment's attempt to entirely replace common morals with abstract ethical principles, along with its dichotomy between emotion and rationality, has caused much lingering confusion in the West. The scientific investigation of human morality must set aside the Enlightenment's obsession with abstract rationality and universal principle. Once we have a clear understanding of the way that human morality evolved and naturally functions, we can then better appreciate how and why abstract ethical principles have developed in recent civilizations.

Conceptions and Misconceptions of Culture

> "If you could bring to the American Scene an Australian aborigine who had been socialized in his own culture and then trained in social science, he would perceive all sorts of patterned regularities of which our sociologists are completely unaware." [Lloyd Warner, quoted in C. Kluckhohn, "The Philosophy of the Navaho Indians" (1949), p. 359.]

Culture is shared and preeminently sharable among humans. Culture is the one thing that the human being has been most evolved to share, besides genetic inheritances from the primates. Praxes and practices, not merely thin descriptions, convey how to do culture. Indeed, writing is unnecessary; Homo sapiens had complete culture 100,000 years before the technology of writing was invented. Only scholasticism could rashly presume that culture lies mostly in books. Anthropologists record observations and compose books; they know best how human culture evades and escapes dry description. Culture is experienced in performances, not propositionalized.

The cultural replication and duplication of the cultural praxes starts before birth and never ceases til death, so long as communication happens. To be doing something "uncultural" is an oxymoron; a human imitating some other animal or plant or rock displays a performative exhibition so characteristic of humanity. Culture is shared and acted out; humans do culture as thoroughly as they do digesting. No discipline can disagree. Psychology cannot reduce cultural engagement down to just subjective experience without fallacy. Sociology cannot say "culture is not shared" after equating sharable skills with just explicit information or institutions, a folly that social theory should be least likely to follow. History never observes anything about the past not already culturally formed and socially formatted. Archaeology has in evidence no object from humans not cultural in nature; to attribute something to human activity already brings it within the scope of culture. Politics, law, economics, and similarly practical disciplines would never even think to question their immersion within culture.

Only philosophical aesthetics and revelatory theology could dare to imagine some people occupied outside of culture: aesthetics, by denigrating the masses beneath elite "culture"; and theology, by denigrating the "culture" of sinners compared with saintly lives. The rest of the disciplines in consensus supply the antidote to such undisciplined arrogance.

Culture has been thought to apply ideally to "community" and "nationality". A community would share much the same culture, not because culture best exists in communities, but because a group stays communal by sharing in the same cultural practices for the same ends. Communities for that reason tend to be clannish, and scale up to about that size of 200-2,000 members. Beyond that size, a social group has difficulty regarding themselves communally, so tribalistic features convey their commonality, and since the Bronze Age "civility" and "nationality" works in that way. The "nation" must symbolically appeal to admirable values (in a quasi-mythic manner), so the notion of sharing one heritage and culture gets broadcast and indoctrinated, even after a large nation plainly observes its multi-cultural society. The twenty-first century will tell the tale of the fates of nations that abandon efforts to even inculcate commonality. Even democracy needs myths.

The term "culture" has only a little in common with the term "civilization". All civilizations have culture, since any human society at any scale has culture. A civilization has a vaster scope than a culture; a civilization may encompass many cultures along with blendings and mergers of particular cultures. A culture, by contrast, may never lend itself to civilization formation.

There is no such thing as a "pre-cultural" condition of Homo sapiens, since the development of culture lies with Heidelbergensis long before the first Sapiens. There was a "pre-civilization" condition for humanity, since civilization was invented, at various places and times during the Stone and Bronze Ages. Criteria for "civilization" need not be very strict or precise. Key features are: high-density settlement, role stratification, trade and wealth concentration, monumental construction, and political order. Plenty of Stone Age societies attained three or four

of these criteria, so they are not clearly classifiable as civilizations. Once the Bronze Age started, the term "civilization" gets easier to apply with more explanatory power, as true cities were evident.

A "civilization" can also answer a crucial archaeological and sociological question. For some artifact of greatest complexity and craft (for its time), the question may be asked, "What is smallest unit of human organization capable of being responsible for its existence?" The right answer will always be "a civilization." For example, only the entire civilization of ancient Egypt could have made a Great Pyramid possible, but no other civilization must figure in that explanation. The fullest explanation for the existence of the immense cathedral Notre Dame de Paris cannot merely be "Paris" or "France" since the architectural expertise and artistry, along with the religious motivation, required the entire Latin Catholic civilization of Europe. Similarly, the existence of the most sophisticated device of our times – perhaps a space shuttle or a supercollider – can only be explained by Western civilization and not any smaller set of nations.

Techne as a Primeval Praxis

Tool use has always accompanied the Homo decent from great ape ancestors. Although a specific type of technology can lost to a small society lacking enough experts, no human society has ever reverted back to a pre-*techne* existence. Every human language includes a root word to indicate 'handiwork' and 'craft'. Examples: Egyptian *hemut*; Chinese *shǒuyì*; Russian *сооружать*; Swahili *kujenga*; Mayan 'patb'u-'. In Indo-European languages the root 'teks' indicates fashioning and building, such as carpentry or weaving. In Vedic there is the verb is *takṣ* and *tákṣan* for 'carpenter'. In Avestan those terms are *taš* and *tašan*. In Greek the root is τέχνη (*tékhnē*) for "craft" with τεκταίνω for 'construct'. In Latin the word *texere* means building or weaving.

In all these languages, this root 'teks' is also used for 'composing', as in composing a song, poem, or story. Thus, in Latin, we see 'texier' for fashioning a line of verse which gives us the European word 'text' to refer to any composition (a verse, a message, etc.) as written. [see Litchfield, Indo-European Poetry and Myth, pp. 38-39.] Another example: the ancient Chinese word for a scriptural text was jing 經, which first meant the warp to weaving.

The development of plastic Art (2-D, 3-D) from Techne may appear counter-intuitive until the intermediary of Craft is appreciated. Only elitist notions of Art refuse to admit its genealogy from Craft. There is one notable divergence distinguishing the plastic arts, where creativity does not shape parts to fit a set design but instead reveals how materials may emerge into whatever forms they inherently can become.

Language and Learning as Primeval Praxes

Speaking societies are presently universal: there is no known human group that "lost" the ability of fully grammatical speech by reverting back to just gestural/guttural mimetic language. Spoken language is presently a cultural universal. Sign language among the deaf is not a counter-example. Modern sign language is not just mimesis, but mimetic language enlarged for equivalence in syntax and grammar to the capabilities of spoken language.

Overall, while language is surely a Sapiens universal, articulate speech is also universal only in the sense that "modern" Sapiens utilized it, since it is probably dates to around 120-80 kya. Before then, Sapiens only had mimetic language, which is older than Homo sapiens and hence mimesis counts as a Homo universal and as a Sapiens universal. For Sapiens, it is easy for one parent to teach an entire language, mimetic or articulate, to a child.

Spoken language (or an equivalent such as sign language) guides the proper cognitive development of any human. For example, only speech is able to direct attention to subjective psychological conditions and mental states by discriminating them apart and guiding their management. One's sense of "self" as a deliberative and responsible

agent gets constructed from one's responsiveness to interpersonal discussions about thoughts, intentions, and decisions.

Kin as a Primeval Praxis

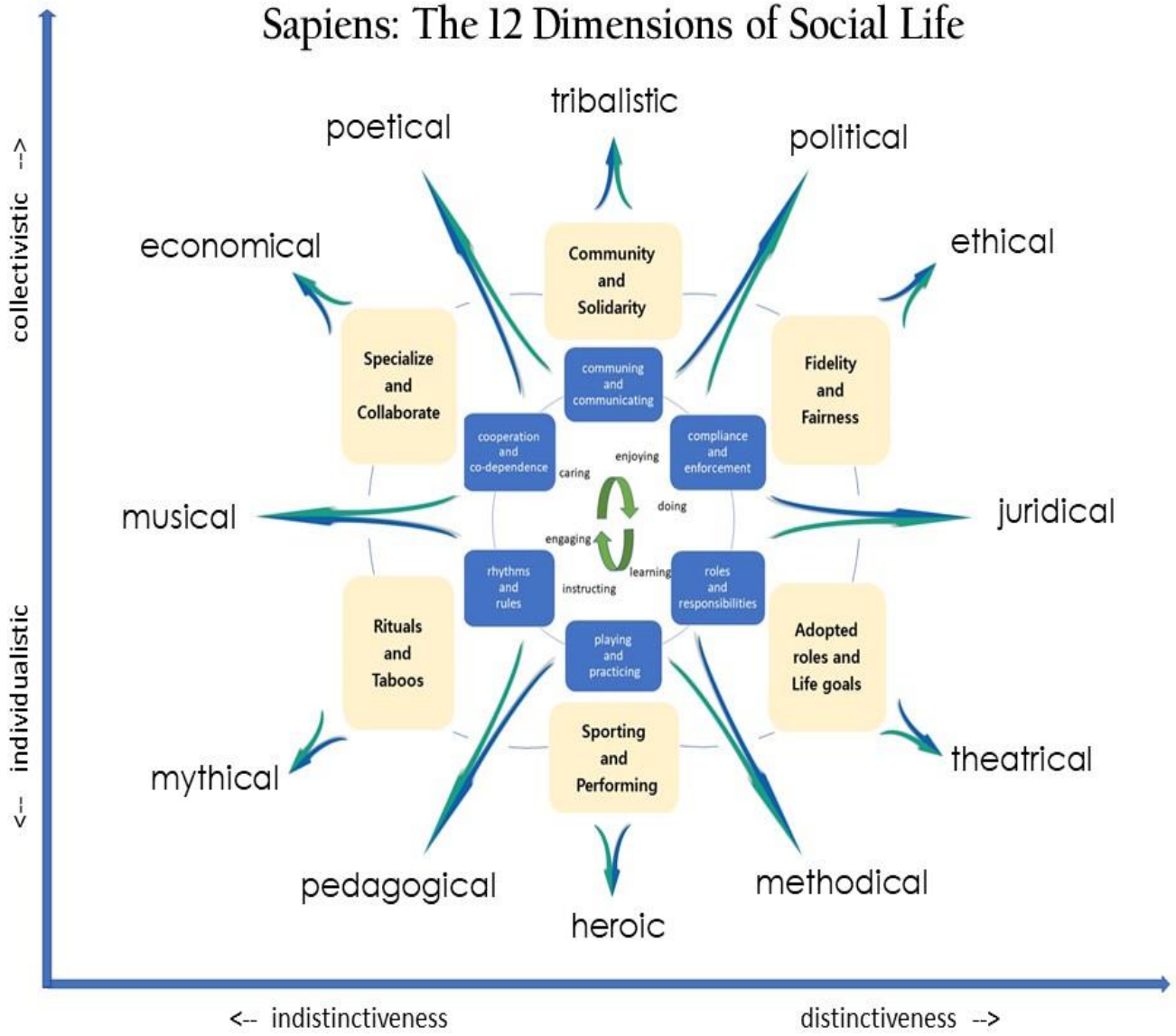
Humanity easily applies "Kinship" to everything above and below in the whole world, as befits one of the primeval Homo symbolic spheres. Hinduism's Rigveda refers to the 'race' of the gods (RV 10.57.5 - *daíviyo jánah* - also see RV1.31. 17, 1.44. 6, 1.45. 9; RV6.22.9) and the "race of gods and mortals" (RV1.70.6). The same expressions are found in earliest Greek epic, Old Germanic, Norse, and English as the term "kin" for both gods and mortals. [see Litchfield, Indo-European Poetry and Myth, p. 126.]

The Social Dimensions of Life

Abstractions such as “Custom” or “Symbolism” or “Thinking” are surely inherent to Humanity.

> There are twelve grounds that add up to custom: the twelve Cultural Praxes.
> There are accordingly twelve realms to symbolism: the twelve Symbolic Spheres.
> Within these customary realms, the modes of human thinking: the twelve Social Dimensions.
>
> ART, TECHNO, EDUCATE, LANG, MYTH, RITUAL, MUSIC, MORAL, GAME, TRADE, TRIBE, KIN

Philosophers and philosophical social theorists have noticed how common modes of living can be grouped into a limited number. Simmel: “social forms” or “cultural worlds”; Cassirer: “symbolic forms”; Wittgenstein: “forms of life”; C. Geertz: “cultural system”; S. Turner: “Verstehen (understanding) bubble”.



Artistry and Individuality

"Song is to mortals of all things the sweetest." Aristotle quoting Musaeus, *Politics* book 8

The evolution of Humanity's Culture coincides with the development of Personhood. The emergence of Individuality for its own sake was a later opportunity after some key cultural praxes reached disciplined attainments during the Bronze Age. Individuality did not abruptly appear from nowhere; it had to be configured from simpler modes of individualistic exemplars.

The paradigm example of this configuration for the Individual arrives from Art. The Ten Individualisms:

Praxis	2-Dimensional form	3-Dimensional form	4-Dimensional form
Art	drawing, painting	static sculpture	dynamic figure
	Other disciplined praxes permit analogues of that individualistic creative artistry at the 4-D stage.		
Literature	elegiac poem	epic narrative	biography
Education	instruction	schooling	researching
Techne	laborer	artisan	inventor
Music, Drama	choral group	dramatic play	lead voice, character
Religion	priest	saint	founder, prophet
Trade	vendor	merchant	innovator
Sport	game	team sport	champion
Politics, War	warrior	chieftain	leader, hero

What these various 4-D forms of Individuality have in common is their superiority at originality. They all illustrate ways of displaying *genius* – the 'genesis'. The ten cultural praxes above are listed in order from maximum individuality to modest individuality. Artistry and literature offer the most opportunity for maximal individuality (great artists and authors transcend schools or guilds) and then individualism subsides as the supportive group plays a larger role, until the pioneers and heroic figures only do their great deeds in the company of companions.

Praxes conducive to youthful genius involve play and performance. The arts, poetry, pure math, technical invention, charismatic cult, sports, and martial arts are familiar with prodigies equaling and surpassing their elders. Elders hold advantages in prosaic, economic, and political realms where long experience counts.

The two praxes unfavorable to individual genius are Ritual and Morality. Superior rituality promotes communality rather than hubris; superior morality requires magnanimity rather than pride. If ritualism reaches for Individuality, its dynamism finds expression in the performing arts. If moralizing reaches for Individuality, its dynamism inspires ethical ideologies.

PLAY is the ultimate humanistic progenitor of the Ten Individualisms. True individuals in their original creativity are in effect "playing" at life itself. That is why they each attain a mode of uniqueness, and each one bears a sort of sacred worth as the source of vital humanity itself. Authentic individuality must be ultimately forgivable by Humanity even when it seems deviant or disruptive.

A true Individual makes no apology, least of all to Humanity. Humanity itself has only grown and developed from *Homo habilis* to modernity thanks to courageous individuality, and Individuality finds its meaning and purpose only through Humanity.

"I am quite incapable of understanding how any work
of art can be criticized from a moral standpoint."
– attributed to Oscar Wilde

There are non-moral areas of culture, where basic norms such as caring, fairness, justice, and obedience do not apply. Five components to human culture, among the twelve "cultural praxes" or "symbolic spheres", are not regarded as entirely answerable to the ten moral foundations.

They are: Art, Techne, Language, Religion, and Music.

The reason is because these five praxes are grounded in independent and pure forms of creative originality. Genius, like genesis, is not answerable to mundane mass morality. What can be expressed, what can be invented, what can be said, what can be worshipped, and what can be harmonized are always more valuable in the long run than the things that common morals happen to uphold in the short run. The moralistic opinions of the masses are almost surely wrong in the eyes of posterity anyways. Art, Techne, Language, Religion, and Music lead that moral progress into the future.

Put another way, morality is designed to maintain what humans need to be doing to live, but the five creative spheres supply what life is worth living for. The great arts will not hold themselves accountable to moral standards. The very idea of "immoral" art, "immoral" technology or science, "immoral" free speech, "immoral" free religion, and "immoral" music or drama, are somehow self-contradictory and obscene notions.

The Artist, the Inventor, the Author, the Saint, and the Composer are exempt from moralistic judgment by the masses.

Nothing about culture gets an immunity from academic scrutiny, however. Philosophy of ___ for each of these five praxes, and the other seven as well, investigates the authenticity and legitimacy of any practices conducted in their name. Ethics in particular is responsibility for evaluating the long-run ethicality of any artwork or performance, a new technology, a literary work, or a religious idea.

Disciplines in Competition over "Human Nature"

> "The anthropologist, like every kind of scientist, is sure to find in his researches a great deal that is perplexing. If he is to understand it, he must approach it in the belief that it is intelligible. To account for a custom or belief by appeal to human folly or perversity is to give up the attempt to understand it."
>
> R.G. Collingwood, The Philosophy of Enchantment, 2005, p. 185.

By the Twentieth Century, there arose Three Primary Paradigms, from Physics, Biology, and Sociology. These paradigms fundamentally conflicted. Biology and Sociology stayed more holistic, but Sociology worried the most about human nature, and human freedom and responsibility.

Biology vs. Physics: Since physics rules out "purpose" and "design" in nature (since theology is banished), what does biology think it is doing when it is studying the structures and functions of living organisms? No animal has a "nature" that assigns it an essential "purpose" since these things are physically unreal. However, biology continually finds, as Aristotle and Darwin did, that a species does have a nature designing it for proper functioning in its environs.

Sociology vs Physics: Since physics explains all events and causes in terms of energetic forces (materialism), there is no need for the hypothesis of free will: it is either disproven by science, or at least highly unscientific. An organism's abilities and actions are the responsibility of chemistry and physics – there is nothing else within the organism to add anything also needed for behavior. The animal's "will" – including the human will - is just shorthand for the release of its internal energies upon environing stimulation (behaviorism). There is no such thing as human "freedom" from all laws and forces. All behavior is caused by conditioning, especially social conditions organizing human life.

Sociology vs Biology: Biology insists on discovering such things as traits and capabilities that are "essential" to the human being, and provide deep purpose to human existence. Are humans really just "natural" animals, displaying our given human universals as a species? Much about us humans is socially constructed and artificial, adding the "conventional" to the "natural". In some sense, what is important about being human is being unnatural: we think up new ways of doing things that no amount of evolution "designed" us for. Indeed, sociology suggests that being part of Humanity is really about living entirely artificial lives where our customs and laws are the product of experiment and reasoning, not "what is natural for us to do." What is still natural, about Humanity?

Resolution: Biocultural Co-evolution

Staging culture within nature may pose special difficulties, that tempt unnatural solutions, if nature is regarded as mechanistic or culture is taken as conventional. Nature's blunt forces don't look like plausible causes for norms of rationality or morality. Society's artificed ways do not seem responsible for them either. Is there a third option? Having made the first mistake in asking nature or society to be responsible for what we know and value, the next mistake is a leap beyond them, assigning responsibility to some unnatural (platonic, spiritual, theistic, etc.) origin instead. False dilemmas abound.

A better understanding of humanity's origins gives large credit to the biocultural co-evolution of humanity. Anthropologist Joseph Heinrich outlines this process:

… natural selection favored genes for building brains with abilities to learn from others. These learning abilities, when operating in populations and over time, can give rise to subtly adaptive behavioral repertoires, including those related to fancy tools and large bodies of knowledge about plants and animals. These emergent products arose initially as unintended consequences of the interaction of learning minds in populations, over time. [Joseph Henrich, *The Secret of Our Success: How Culture is Driving Human Evolution* (Princeton, N.J.: Princeton University Press, 2016), p. 35.]

We humans have been made to think as we can, not by blind evolution alone, or bright invention alone, but through their long-entangled co-creations. As our Homo line branched farther away from great apes, evolutionary pressures began to develop super-learners, acquiring clever behaviors from social cues and cares. From infancy, simple capacities easily engage with promptings from one's elders, to guide strengthening habits then readied for further role-taking in collaborations, and so on. Learning itself has to be learned, but this is no paradox. Childhood evolved.

Babies arrived with propensities to learn so quickly that spastic motions soon become proclivities during childhood, and maturing skills can promptly be taught to others. Social mentality gradually became more heritable than egoism. Homo ancestors, particularly Homo habilis and Homo erectus, accelerated this self-perpetuating and enlarging cycle, driving larger brain sizes, prolonged juvenile traits, and complex interpersonal relations, which in turn allow for craftier invention and knowledge retention.

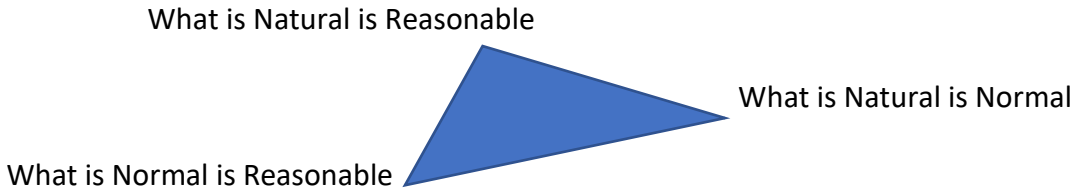
Most importantly, intentionality was increasingly recursive as memory expanded. That development allowed group coordinations for participatory practices such as dancing, singing, mimetic (guttural- gestural) language, shared childrearing, instruction, and reciprocal morality. Those original cultural forms in turn permitted more effective tool-use, strategic hunting, food processing, security, and solidarity.

Partly genetic and partly conventional, what proved necessary for the survival of both individuals and groups (that distinction blurring in the super-social Homo species) then became essential for trained mentality. That pseudo-debate over whether "gene selection", "individual selection", or "group selection" has driven hominin evolution over millions of years is a relic of needless reductionism. Very little at one level was ever altering independently from the other levels, and modifications were happening for much the same reasons. Given opportunities for concerted attentiveness, distant ancestors evolved as they discovered practices conducive to better survival.

The question, "Is that particular human behavior or practice basically natural for us to be doing, or entirely cultural and artificial?" is actually a mistake because it assumes a false dilemma. What is now natural for us, is to be cultural. That's why we are so good at culture. The question, "Was that particular behavior or practice an adaptation that the environment selected for, or was it something that us human invented for ourselves?" is another false dilemma. What is now cultural for humanity, was largely due to earlier Homo selection upon themselves.

If Culture is Natural, and We Built Culture, How "Natural" Are We Still?

Lingering philosophical issues remain for charting how human "nature" works. All traditional societies, along with their heritages of custom and religion, rely on the "Natural Triangle":



Natural Theology agreed: A thing's normal design is evidence of the divine intelligence that created it. (Natural Law Theory)

Nature Philosophy agreed: What humans naturally pursue is what they should normally pursue and achieve. (Naturism)

Naturalistic Sociology agreed: Normal societies promote what humans naturally pursue and enjoy. (Utilitarianism)

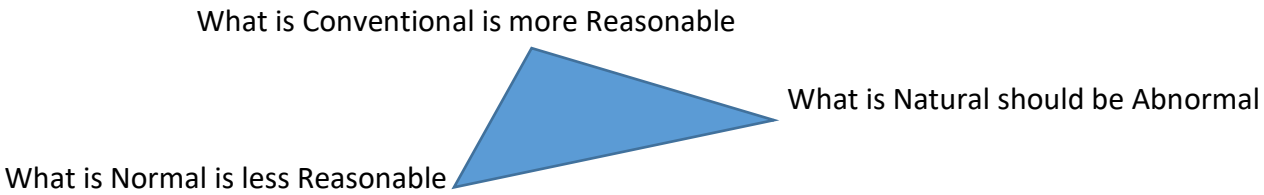
Each "nature" disciplinary view has unacceptable consequences.

Natural Law Theory judges as "immoral" human behaviors deemed to be "abnormal" or "disordered" or "degenerate".

Naturism easily takes the form of Social Darwinism, or bad Sociobiology.

Naturalistic Sociology can pick an "advanced" culture to be the standard for rankings of "superior" and "inferior" cultures.

What is the "Artificial" alternative to the quest for "Human Nature"?



From this standpoint about human artificiality, whatever has been common and prevalent among humans on the planet has no automatic justification – it should be suspect and targeted for replacement. Historical longevity – culture, custom, heritage – is intrinsically inferior to what is newly conventional. What is new about society is refashioned to be far more reasonable, even if only the few (the privileged) will be able to do it (afford it, access it) at first.

Reasonable societies improve upon, and override "natural" human proclivities and inclinations. What shall be deemed "normal" behaviors and activities are simply those of more reasonable societies that are less and less dependent on anything "natural" or "customary" about humanity.

This standpoint advances Cultural Relativism to an extreme degree. Anthropology has no choice but to explore cultural relativism: Different cultures pursue their own varieties of cultural forms, without needing to apply some singular standard about what constitutes the "right" sort of culture.

Conventionalist Psychology: Nothing cognitive or behavioral is "common" or "normal" across humanity because infants arrive as entirely plastic and pliable humans able to easily acquire any habits.

Constructivist Sociology: Each society inculcates its own norms and practices as it likes, without resistance from anything like an inherent "human nature" in infants and children. Any society only needs to encourage parenting and schooling (etc.) to instill (through conventionalism) the socially-desired habits, practices, and conventions.

Contractual Political Theory: Any government enjoys legitimacy so long as a majority of citizens freely agree to its constitution, so there is no "better" or "worse" kind of government. Any government only needs to ensure the indoctrination of society (through constructivism) so that citizens approve governing principles.

Each "conventional" disciplinary view has unacceptable consequences.

If Conventionalism is right, then nothing wrong or abnormal is happening if parents prevent the socialization of children into cultural praxes (such as music, art, sport, morality, and so on), and no one has any right to complain about different ways of parenting. There is no such thing as the "neglect" or "miseducation" of children.

If Constructivism is right, then nothing wrong is happening when a society indoctrinates its members into prejudices, hatreds, or rigid mindsets and doctrines, and other societies should ignore its internal affairs. There is no such thing as a "backwards" or "primitive" kind of society.

If Contractualism is right, then nothing wrong is happening when a non-democratic government is in power, and democratic governments should treat non-democracies with toleration and respect. There is no such thing as an "illegitimate" sort of government.

The Logic of Normative Propositions and Value Judgments

Deductive logic works best with factual, non-normative propositions, in which a term retains the same meaning while used in multiple propositions that avoid generalizations. Key fallacies in deduction violate these wise guidelines.

Equivocation Fallacy: A term used in two (or more) propositions of an argument cannot have two different meanings. Key terms should be defined with precision and used in that same way.

Generalization Fallacy: A conclusion about all members of a class cannot be derived from facts about some members of a class. Also, a generalization about a whole class may not apply to some particulars in that class.

Is-Ought Fallacy: No value judgment can be derived from premises about factual matters.

Particular logical problems arise when the words “normal” and “normally”, and “ordinary” and “ordinarily”, appear in arguments. These terms are intrinsically equivocal, compressing a factual and normative meaning into a single word. In ordinary language, this is an advantage for simple communication about normal matters. [Notice how those words are so easily used, in that sentence?]

In daily life, what is not ordinary does normally deserve some extra attention, and perhaps preventative measures, to prevent something abnormal from happening. Generally, what is normal is good, and what is abnormal is bad. What is generally normal is normally good.

Consider the following set of inter-linked arguments.

A.
Breastfeeding is normal for mammals. H. Sapiens are mammals.
So, it is normal for the human species to breastfeed.

B.
It is normal for the human species to breastfeed. Women are human.
So, it is normal for women to breastfeed.

C.
It is normal for women to breastfeed. Birthmothers are women.
So, it is normal for birthmothers to breastfeed.

D.
Normally, birthmothers breastfeed their infants. Any generalization has some exceptions.
So, birthmothering without breastfeeding is not normal.

E.
Birthmothering without breastfeeding is not normal. What is not normal is abnormal.
So, birthmothering without breastfeeding is abnormal.

F.
Birthmothering without breastfeeding is abnormal. Birthmothering is a stage of mothering.
So, mothering without breastfeeding is abnormal.

G.

Mothering without breastfeeding is abnormal. A birthmother not breastfeeding is abnormal.
So, not breastfeeding is abnormal mothering.

H.
Not breastfeeding is abnormal mothering. What is abnormal is suboptimal.
Not breastfeeding is suboptimal mothering.

I.
Not breastfeeding is suboptimal mothering. Suboptimal mothering is suboptimal for an infant.
Not breastfeeding is suboptimal for the infant.

J.
Not breastfeeding is suboptimal for the infant. Suboptimal care is poor care.
So, not breastfeeding is poor care for the infant.

K.
Not breastfeeding is poor care for the infant. A birthmother should not give poor care for her infant.
So, a birthmother should be breastfeeding. [Abnormal motherhood is not breastfeeding.]

L.
Good motherhood seeks what is best for infants. A birthmother should be breastfeeding.
Good motherhood should include breastfeeding. [Poor motherhood is not breastfeeding.]

M.
A normal birthmother wants to be a good mother. Good motherhood should include breastfeeding.
So, a normal birthmother should be breastfeeding. [Abnormal birthmothers do not want to breastfeed.]

N.
Normally, a society promotes good motherhood. Good motherhood does not avoid breastfeeding.
So, societies normally have policies promoting breastfeeding. [A poor society is not promoting breastfeeding.]

O.
Societies normally have policies promoting breastfeeding. A normal birthmother would want good mothering.
So, a normal birthmother complies with breastfeeding policies. [An deviant mother does not comply.]

P.
Normally, societies treat deviancy with shaming and punishment. An abnormal mother does not breastfeed.
So, birthmothers not breastfeeding should be shamed and punished.

Are fallacies lurking within these simple brief arguments?

Now, analyze the following summary abstract of a recent book chapter. The chapter is “Breastfeeding: Women’s Experiences in the Transition to Motherhood,” by Rhona J McInnes & Roslyn Donnellan-Fernandez, in Perspectives on Midwifery and Parenthood (Springer, 2023), pp 193–210. This is its abstract:

“Breastfeeding is a skilled, complex behaviour that requires the mother and her newborn to successfully enact a series of learned and innate behaviours. Infant feeding decisions are often made in response to current perceptions or experiences of maternal and family well-being, the infant’s needs or other contextual influences such as support or pressure to adopt a particular feeding method. Supporting the mother to achieve her breastfeeding goal is key to a positive transition to motherhood, which then enables her to feel confident and

competent in caring for her infant. Facilitating mother-infant skin-to-skin at birth is the first crucial step of breastfeeding initiation and has short- and long-term effects on feeding and maternal-infant well-being. The process of starting to breastfeed, which is most commonly situated within the social and clinical context of the birth space, is strongly affected by individual, family, social and health service factors. Although breastfeeding is the biological norm, a number of biopsychosocial deterrents operate at different levels. The strength and direction of influence vary by setting, which has resulted in several global and national initiatives to promote, protect and support the initiation and continuation of breastfeeding. There is good evidence that additional skilled support that is individualised, kind and caring with a high degree of interpersonal skill can help women to breastfeed successfully."

Anthropos, Homo Sapiens, and Technos

Philosophy of Technology is fragmentary until this question is addressed and well-answered: What is the fundamental basis for the relationship between humanity and technology? This paper defends the Unity approach: the nature of humanity and the nature of technology must be essentially defined in terms of the other. This Unity approach best explains why humans are able to understand what technology is, and what technologies do to both our habitats and to ourselves over time. Fundamentally, the human being, qua fully human, is composed of nothing but capacities for art/techne practices. Dewey's naturalistic pragmatism and Cassirer's theory of symbolic forms have shown the way. The broadest sense of technos is intended here, to cover all the invented praxes from tool-use and performance to myth and language that are needed for creating human individuals and persons. We persons are our technes – the Being of being human is praxiological and technological to the core. Technologies are not external to ourselves. The question, "What happens if we get too dependent or too extricated with our technologies?" is not anthropologically informed. Anthropos is technos. Philosophical anthropology must also be philosophical techno-anthropology.

What does Anthropos refer to? This term shall be used to covers five species. First, Australopithecus from 4 million years ago; Second, Homo habilis starting 2.4 million years ago; then Third, Homo erectus from 1.8 million years ago; then Fourth, the Homo Heidelbergensis / Neanderthalis / Early Sapiens species; then finally Homo Sapiens Sapiens ("modern" cultural Sapiens) which developed around 100,000 years ago

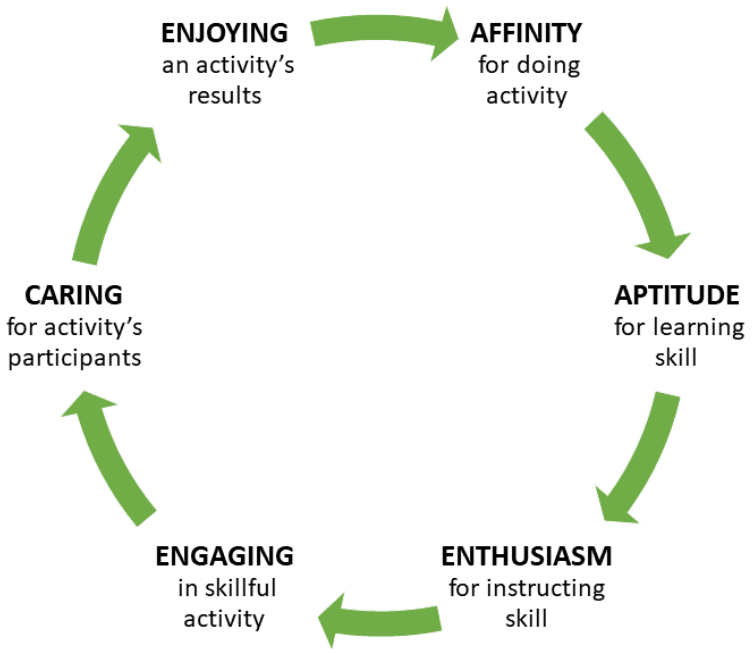
If technos were only associated with just Homo sapiens, that would be enough evidence that technos is central to the functioning of our species. But technos is far older than Homo sapiens. What does Technos refer to? Technos is not just tool use, which is displayed on occasion by many animals. Technos covers these capacities:

Using tools for modifying things in the environment
Modifying tools to work better for tasks
Teaching the young to make good tools
Modifying tools for more and more specialized uses
Making tools specialized for the making and modification of other tools
Teaching techniques for the proper use of specialized tools
Cooperating in the making of complex tools having specialized parts
Cooperating in the application of complex tools to group tasks
Teaching techniques so that many people can use tools alone or in groups

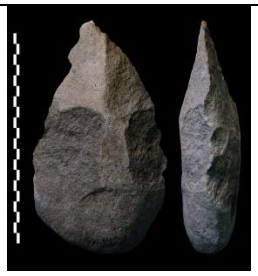
Homo erectus had many of these capacities; Homo sapiens had all of them from the time our species emerged.
The shape of the tool indicates the form and functioning of the minds able to make it and use it. This is a premise of cognitive paleoanthropology, asking how the Homo and human mind evolved.

Australopithecus 4mya – 2mya  Brain size: 380-430cc	 chopper 3.3 million years ago "Lomekwian" tools - edged without bifacing or symmetry	Social abilities: butchering carcasses hacking vegetation imitating other tool users	Cognitive abilities: monitoring plans of others direct reciprocity no artistry, no aesthetic

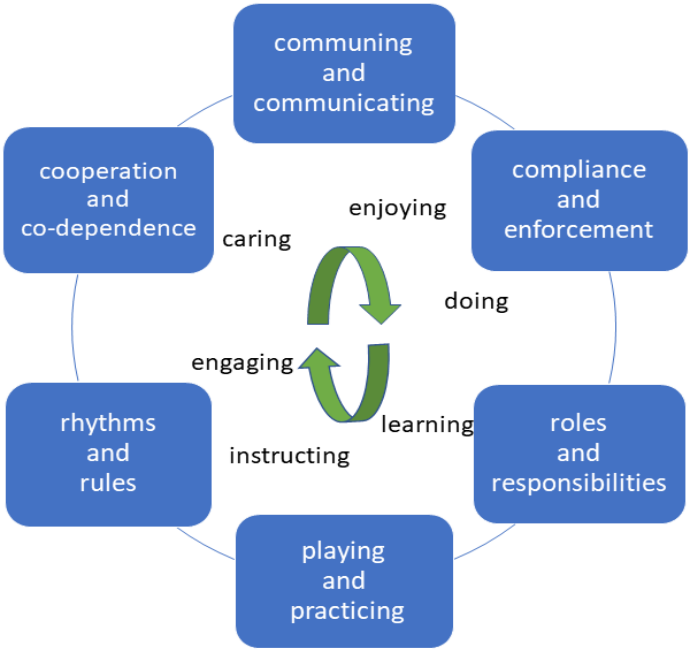
The Core Cycle of Techo-Socio Cognition

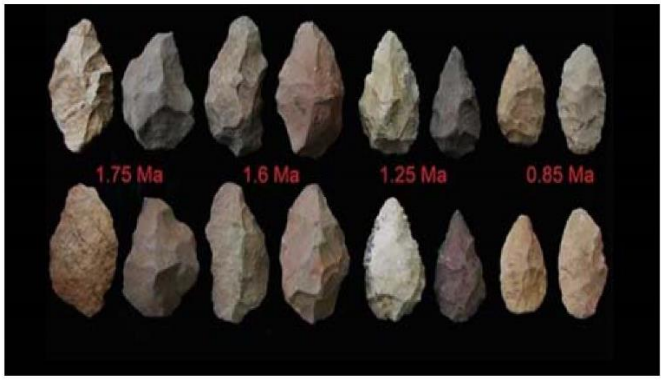


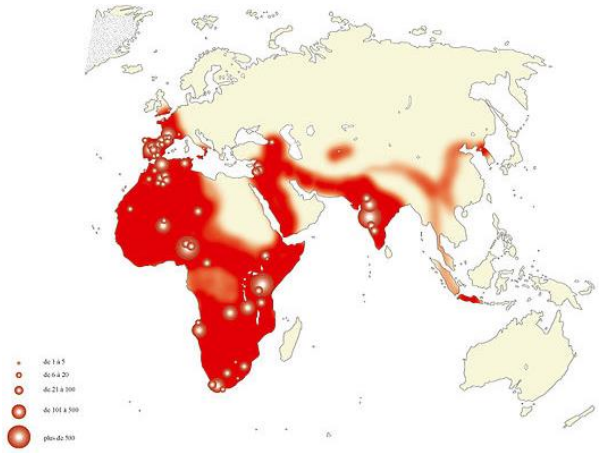
Homo habilis 2.4mya – 1.4mya  Brain size: 620cc	 choppers, cleavers 2.0 million years ago "Oldowan" tools - edged with some bifacing but no symmetry	Social abilities: processing meat skinning animals processing vegetation cooperative hunting imitating other tool makers	Cognitive abilities: understanding views of others monitoring others' skills

Homo erectus 2.0mya – 110kya  Brain size: 850-1100cm	 hand axe 1.7 million years ago early "Acheulian" tools - bifaced with some symmetry	Social abilities: group practices moral enforcement high mobility hunting with tools animal skins controlled fire	Cognitive abilities: understanding ideas of others monitoring others' ideas about oneself First etching – 500kya, Java 

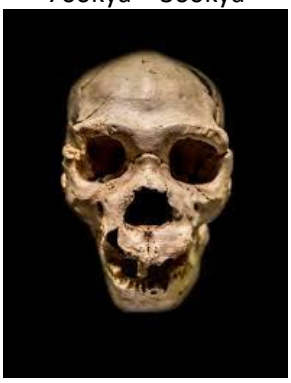
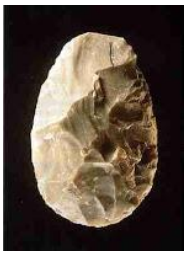
Homo Erectus "social cognition" (1.8mya – 800kya)



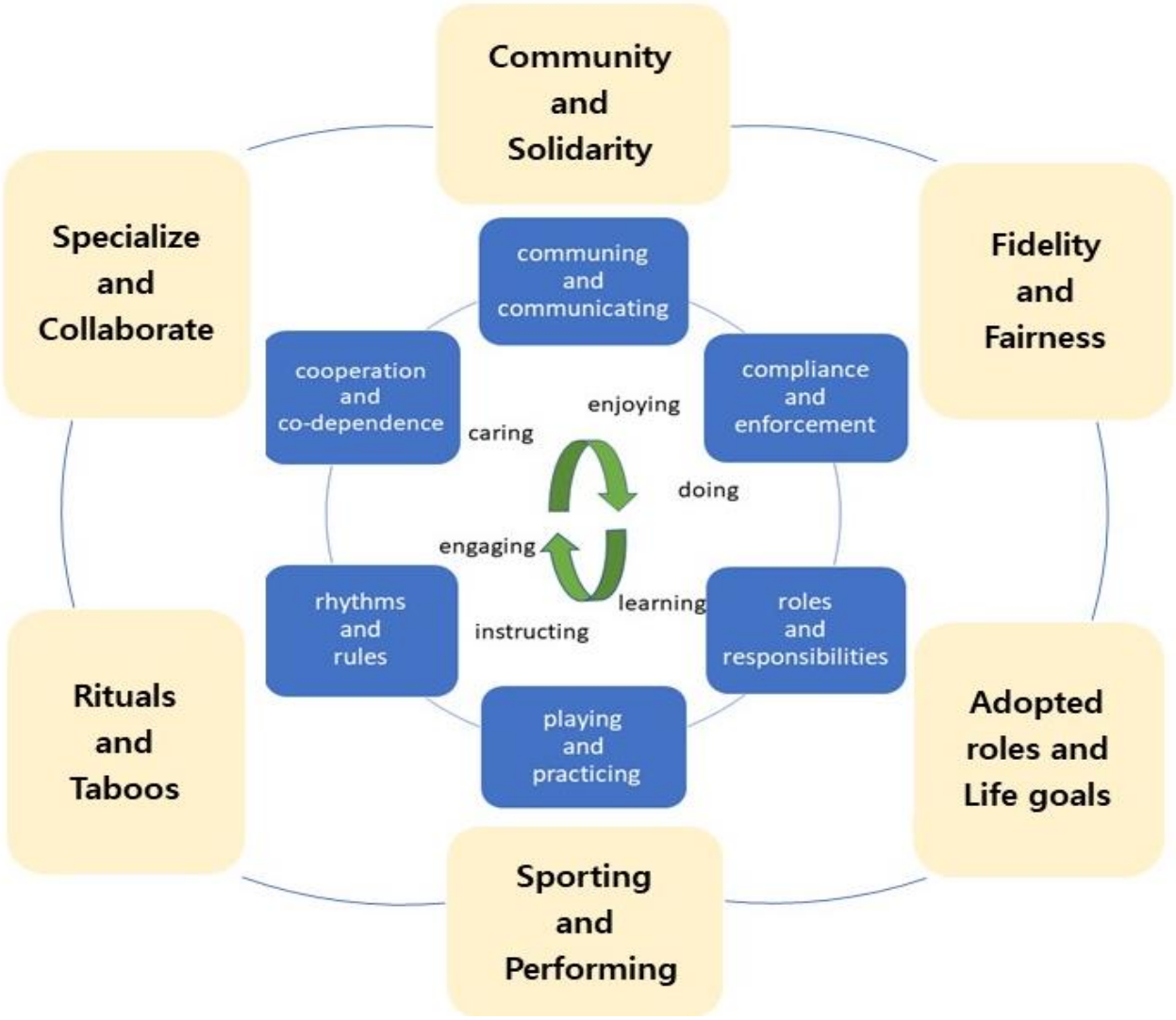




The progression of the shaping to Acheulean hand axes, and their geographical distribution during the Middle Pleistocene.

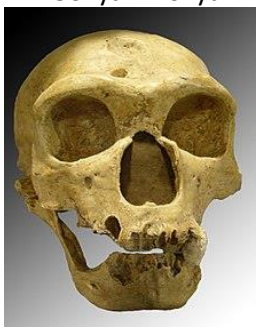
Homo heidelbergensis 700kya – 300kya  Brain size: 1200cc	 hand axe 500 thousand years ago better "Acheulian" tools - bifaced with ample symmetry and harmonious design	Social abilities: indirect cooperation ritualistic musicality moral enforcement instruction of young specialized skills	Cognitive abilities: understanding beliefs of others mimetic language artistry, symbolism First sculpting – c300/ 400kya, Morocco 

Homo heidelbergensis, Homo neanderthalis, early Homo sapiens

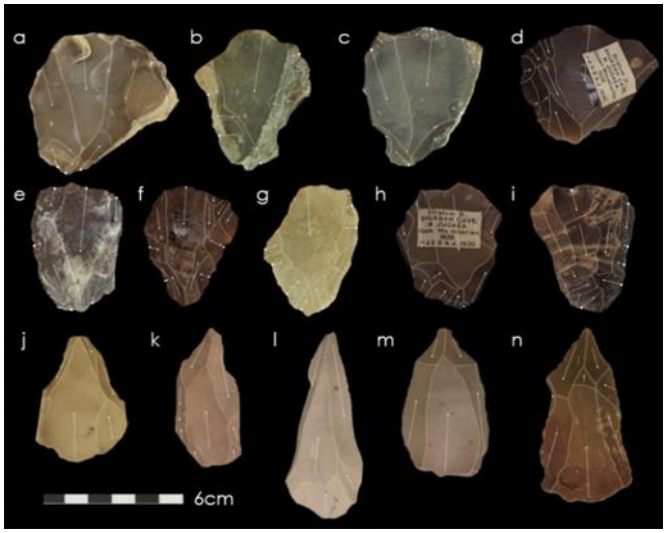


Acheulean handaxe
Kent, England.
Perhaps 400kya

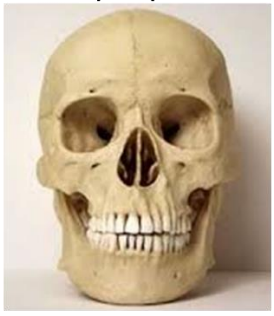
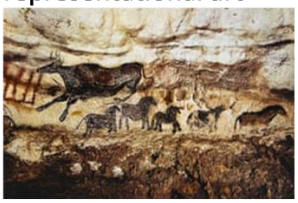
Late Acheulean handaxe.
Berkshire, England
40cm (16in) – too large for normal use.
Approx. 300kya

Homo Neanderthal 450kya – 40kya  Brain size: 1400-1500cc	 "Levallois" and "Mousterian" tool industries - ample symmetry and harmonious design	Social abilities: indirect cooperation ritualized performance specialized skills instruction of young cooperative tool-making clothing, sheltering	Cognitive abilities: understanding beliefs of others mimetic language singing artistry– cave painting 65kya in Spain 

Levallois technique of knapping for small blades, points, and tips, circa 400kya to 200kya.



Mousterian spear points, and the extent of Neanderthals during the Middle Paleolithic, around 160kys to 40kys.

Homo Sapiens 250kya – present  Brain size: 1300-1400cc	 variety of stone implements & non-functional big handaxe 	Social abilities: group tasks & projects group rituals social roles & tribalism skill specialization advanced hunting education of young representational art 	Cognitive abilities: full grammatical speech by 100kya spiritual/religious ideas geometrical etching – 70kya, S. Africa 

Decorative and graphic ability branched off from technos, and much of artistry remained part of craft and construction.

Site: Twin Rivers, Zambia. 250kya.
Hematite stone with rubbing for the ochre pigment.

Bone fragment with etching marks.
Ramle region, Israel. Approx. 120kya.

Ochre marking, and scratch etching. Blombos Cave in South Africa, around 73kya.

Technos is inherently social is nature.

No human uses technos entirely by themselves; one is educated into the techniques of using tools, and one uses techniques that are inherently for generic usage. For example, when a person builds a campfire, cooks a dinner, eats by oneself, and stays warm all night, this person is not using tools designed solely for their own personal use and benefit. Technos must be humanly generic, since it is inherently for human goals and usable by any humans. Show me a tool that is entirely usable only by one person? And just because only one person in a group happens to use a particular specialized tool, that does not show that a tool can have an entirely personal use. Rather, that person is using a tool made possible by many previous generations of creative tool makers; that person is able to use that tool correctly thanks to training by older users; and this person is able to teach techniques of tool use to younger people. Technos is inherently social; what cannot be used by many and learned by many, over generations into the future, will not survive.

Therefore, Technos is inherently generic *and* transferrable.

Technology is the creative development of ever-more complex tools capable of quickly transforming group practices which are reliant upon them.

What seems different about Technology is the way that it raises urgent social and ethical problems that each generation must deal with during their adult life, unlike **Technos** which allows slower and more gradual social change that one person may not notice in their own lifetime.

Homo sapiens refined Technos further, with technology. Technology is the creative development of ever-more complex tools capable of quickly transforming group practices which are reliant upon them. Technology seems so ***disruptive*** because it ***alters group practices within generations***, rather than very slowly across centuries. However, technology is not dramatically different in kind from Technos; technology is Technos in its speedily developmental form.

What seems different about Technology is the way that it raises urgent social and ethical problems that each generation must deal with during their adult life, unlike Technos which allows slower and more gradual social change that one person may not notice in their own lifetime.

That is why, from the standpoint of social ethics, it appears that Technology is something radically novel, and it appears that we are unprepared for dealing with Technology. I disagree. **Technology is not radically different from Technos, and the human species is not unprepared for ethically considering Technology.**

Philosophy of Technology is fragmentary until this question is addressed and well-answered: What is the fundamental basis for the relationship between humanity and technology? Often, the searches for answers to "what is humanity" and "what is technology" are conducted apart from each other. Ethical questions about the meaning of technology for humanity, and about humanity's wisest ethical engagements with technology, must then proceed without any prior coordination between humanity and technology. Yet ethics is confronted with great difficulties when embarking on exploring such questions.

Ethics itself, if confronted with humanity on the one side, and technology on the other, already has more in common with the side of humanity, naturally. Indeed, if morality is already incorporated into an understanding of humanity, as something among the human proclivities evolved for, and conducive to, the welfare of human societies, then ethics seems quite human in its basis yet aloof from technology and its techniques.

Of course, a human-centered ethics can be applied to the obvious consequences of technology for our interests and the visible impacts of technological applications on social practices and institutions. However dealing with effects of technology is not the same as comprehending inner workings of technology.

How is it possible for humanity to comprehend the nature of technology?

There is nothing in humanity that prevents us from deeply understanding technology.

Understanding technologies cannot be delimited to this or that ethic heritage, or culture, or civilization.

The ability to function with technology is a human universal, akin to our propensity for language and music.

To explain technology, do not assume that the nature of humanity and technology are quite distinct.

This brings us to a second question, How is it possible for humanity to comprehend the nature of technology? Evidently **there is nothing in humanity or human culture that prevents us from deeply understanding technology**. Most anyone who is given sufficient guidance can learn how to use most any technology, and with ample intelligence, one can also comprehend how a technology works and functions. Understanding technologies cannot be delimited to this or that ethic heritage, or culture, or civilization. The ability to socially function and cooperate with technology is a human universal, akin to our species' propensity for language and music.

Of course different cultures apply differing sorts of technologies for varying purposes. **This cultural diversity is not an obstacle, but an opportunity**. We speak different languages, but language is universal, and so is our human proficiency with

technology. Cultures do not divide up the capacity for technological expertise, as if people from very different cultures would find it impossible to comprehend each other's technologies. That has never been true. Technologies are rapidly shared and spread across societies and civilizations, and a culture introduced to a new technology rapidly modifies it and often improves it. It is not just "possible" for humanity to understand technology – **our human proclivity for all technology implies that humanity grasps the nature of technology** in a practical way.

We return to the primary question, What is the fundamental basis for the relationship between humanity and technology? The Duality approach is most common, which defines them separately and considers only contingent relations between humanity and technology. The Servility approach defines the nature of technology in terms of its creation and usage by humans, but it does not comprehend humanity as essentially defined by technology. A third approach, defended in this paper, is the Unity approach: the nature of humanity and the nature of technology must be essentially defined in terms of the other.

The Duality approach assumes that "humanity" and "technology" each have their own natures that are definable without reference to the other's nature. EG "humanity makes and uses technology" offers a dualistic approach, as "making" and "using" can be understood as external and contingent relations. Understanding the history of humanity and technology to be intertwined (productively, or antagonistically) is still dualistic. However, if those interrelations are understood to be essential to the past, present, and future of humanity and technology, dualism is abandoned. Human-Technos Duality is evident where the relationship between humanity and technology is not the primary issue. Secondary issues dominate, such as, "What is the essential difference, if any, between natural things and artifacts?" or "Can all technology be understood as extensions of human organs of sense and motion?"

The Servility Approach presumes that "technology" must be essentially defined with reference to humanity, but humanity can be sufficiently understood without reference to technology. For example, to say that "technology is produced and employed by humanity" offers a servility approach, by allowing technology to basically depend on humanity, without emphasizing an essential dependency of humanity on technology. Indeed, to argue that humanity has become thoroughly reliant on the products provided by technology is precisely the standpoint of this Servility approach.

The Unity approach proposes that "humanity" and "technology" are only comprehended by understanding the nature of each as having essential relations with the other. For example, asserting that "humanity and its technology emerged and mutually developed together" is a view offering a unity approach, by requiring humanity and technology to be essentially defined in terms of each other. According to this Unity approach, all human abilities, and our social practices, are direct or indirect manifestations of our cognitive capacities for Technos.

This Unity approach best explains why humans are able to understand what technology is, and what technologies do to both our habitats and to ourselves over time. Where is there a fundamental difference between humanity and technology? The Unity approach cannot see any fundamental difference where an essential human ability or practice has nothing to do with our capacity for Technos and our proclivity with Technology.

Technologies are not external to ourselves. The question, "What happens if we get too dependent or too extricated with our technologies?" is not anthropologically informed. Anthropos is technos.

It seems easy to think of practices essential for humans having nothing to do with technos. But even examples such as art or morality turn out to depend on capacities developed through the archaic development of Technos. Art is far younger than Technos, as the archaeological evidence shows. Indeed, artistry is just a specialized mode of Technos. As for morality, it likely emerged into full development with Homo Erectus in order to stabilize the intensely cooperative practices of daily life. Because morality stabilizes cooperative practices, and cooperative practices revolved around Technos, there was never a wide cognitive gap between morality and Technos. What they must have in common is the maintenance and transmission of norms of proper techniques shared among humans across endless generations. Morality and Technos are the twinned

manifestations of intense human sociality. It is impossible to imagine the continued success of Technos for group welfare without the sustained guidance of morality for group cooperation.

Technology consists of deliberate fast changes in Technos that rapidly modify group practices. And we have said that Ethics consists of deliberate fast changes in Morality that support changing group practices. And finally we have said that humanity has the capacities for doing both Technology and Ethics. Why should Ethics be unable to deal with Technology? There is no fundamental incapacity for human cognition. Furthermore, where Technology makes its impact, that is where Ethics should be involved also.

This is the intellectual basis for the ethics of technology, grounded on the philosophical techno-anthropology presented here. The worry is that Ethics can never be unified enough to comprehensively deal with planetary issues of technology. But there is no basis is philosophical anthropology to justify this worry. Although cultures obviously utilize ethics to adjust their social structures in various ways, appropriate to their own social problems, the ability to apply Ethics is universal and not limited to the scale of the society. Just as culture cannot fragment the human capacity to understand and deal with technology, so too culture cannot fragment our human capacity to grapple with ethical implications of technology.