

General Psychology Walks Again

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Zusammenfassung

Allgemeine Psychologie als Wiedergänger

Dieser Artikel hat zwei Teile und erklärt die Rolle, Wichtigkeit und grundsätzliche Ordnung der Allgemeinen Psychologie. Der erste Teil wird wie eine Schauergeschichte erzählt; wir durchqueren die lange Geschichte der Allgemeinen Psychologie und ihre typische Abwesenheit, also die Krise der Psychologie. Auf der Basis der Theorien von George Henry Lewes, Herbert Spencer, Karl Bühler, und Lev Vygotsky und anderen werden Voraussetzungen genannt, die der Autor für Notwendig für eine Allgemeine Psychologie hält. Aufbauend auf Aristoteles Taxonomie der Bio-Psychen wird vorgeschlagen, Psychologie in vier Unterkategorien zu unterteilen, die jeweils erklärungsbedürftig sind. In evolutionärer Rangfolge: Bewusstheit, die das psychologische Präsens bzw. das Jetzt. Intentionalität, die die Zukunft erschafft. Gedächtnis (mind), das die Vergangenheit erschafft. Menschliches Bewusstsein, das den Blick von Außen ermöglicht. Intentionalität wird zum zweiten Hauptsatz der Thermodynamik in Beziehung gebracht. Gedächtnis wird mit REMS bei Säugetieren verbunden. Menschliches Bewusstsein wird mit einem neuen Verständnis der menschlichen Evolution in Beziehung gesetzt, in dem alle definitorischen Eigenschaften des Menschen – Gesellschaft, Bewusstsein und Sprache – zusammengefasst werden.

Schlüsselwörter: Allgemeine Psychologie, Krise der Psychologie, Epistemologie und Episteme, Wissenschaft, Intentionalität, Gedächtnis, menschliches Bewusstsein, menschliche Evolution

Summary

Explaining the role, importance, and basic layout of general psychology, the paper has two parts. In the first part, told as a ghost story, we visit the long history of general psychology and its usual absence, aka the crisis of psychology. Drawing on the insights of among others George Henry Lewes, Herbert Spencer, Karl Bühler, and Lev Vygotsky, a number of requirements are listed that the author believes are necessary for a general psychology. In the second part is sketched the author's proposal for such a general psychology. Built on Aristotle's taxonomy of bio-psyches, the proposal divides psychology into four subdomains, each in need of explanation. In evolutionary sequence: *Sentience*, which posits the psychological present

moment or now. *Intentionality*, which posits the future. *Mind*, which posits the past. *Human consciousness*, which posits the view from without. Sentience remains unexplained. Intentionality is linked to the second law of thermodynamics. Mind is linked to REMS in mammals. Human consciousness is linked to a new understanding of human evolution in which all the defining attributes of the human being – society, consciousness, and language – arrive all at once and together.

Keywords: general psychology, crisis of psychology, epistemology and epistemics, sentience, intentionality, mind; human consciousness, human evolution.

I. Graveside Seminar

With this special issue of *Journal für Psychologie*, a ghost of ages past – *general psychology* – walks again. Why general psychology? Whatever else it may be, general psychology is also a statement; in fact, it could be called the declaration of independence of psychology. The adoption of Galilean methodology may make you scientific, but it is not enough to make you an independent and rightful science in the family of sciences; you must stake out a territory and claim it as your own. A special science is defined by its special subject matter, a domain of its own within the compass of the sciences, with laws of its own, requiring methods of its own. A special science should be able to outline this domain; or, at the very least, tell what it is about. In psychology, this mapping task is assigned to the special field of general psychology. Alas, today that field is merely a phantom. Without a unifying map, psychology is left with a questionable scientific status, undefined, disjointed, a *mélange* of seemingly unrelated disciplines. Psychology can do better. The attempt to resurrect the old ghost should therefore be much welcomed.

If we wish an evening of spirited and illuminating conversation with that long-awaited specter, Highgate Cemetery in London will not be the worst place to have it. Here lie, within a few meters of each other, George Henry Lewes, (next to his common-law wife, Mary Ann Evans, also known as the famed author George Eliot), the once celebrated philosopher Herbert Spencer, and, just across the aisle under an Easter Island-like bust, famous Karl Marx. Could we also, just for the occasion, conjure up the naturalist Alfred Russel Wallace and the American psychologist and philosopher William James – both being eager contributors to the London Society for Psychical Research, we just might – the seance on general psychology would be nearly perfect. Only old Aristotle would be missed. After being force-fed with spiritual ideas by his teacher Plato, the Greek master reverted to his father's trade and became a firm and dedicated naturalist and would surely decline such a spooky invitation; but we can always speak for him.

Of the people mentioned, there is a good chance you don't know who Wallace was, and an almost certainty that you never heard of Lewes. Both lacunae are telling. In Wallace's case, being unknown is his punishment for having independently discovered evolution by natural selection and nearly scooped Charles Darwin. In Lewes' case, it is the story of the right idea arriving at the wrong time and place.

General psychology and the crisis of psychology

The right idea was the formula for a general psychology with which Lewes opened his work, *The Study of Psychology, Its object, scope, and method*. »The constitution of a science means,« he wrote, »first that circumscription of a class of phenomena which, while marking its relations to other classes, assigns it a distinctive position in the series of the sciences.« Having ringed in the field and related it to the neighbors in the family of sciences, Lewes explains how you must next specify the special object that defines and mandates your special science and add the special methods of search this object requires.

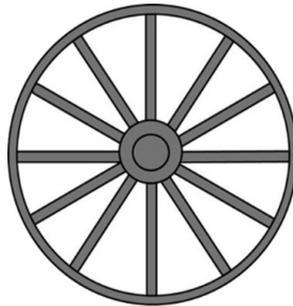


Fig. 1: Lewes' wheel

Thus, constituted with a rim and a hub, and the interconnecting spokes of multiple disciplines – let's call it the Lewes-wheel – a science can begin to roll; »the discovery of today enlarges without overturning the conceptions of yesterday,« Lewes writes, »each worker brings his labors as a contribution to a common fund, not an anarchical displacement of the labors of predecessors.«

Lewes names several sciences which had reached this wheel stage, astronomy, and biology, for instance, then adds that regretfully it »cannot be said of psychology« (Lewes, 1879, p. 4–5). Here there was no common fund, only anarchical displacement. Lewes wrote this in 1879, the famous year in the annals of psychology when Wilhelm Wundt is said to have founded scientific psychology by opening his Psycho-physical

Laboratory in Leipzig. But though this event marked psychology's much needed exodus from philosophy and philosophy departments, it did not end *the crisis of psychology*, as the malaise was soon to be named; rather it exacerbated it. As James confided to his students: »It is no science, it is only the hope of a science« (James, 1892, p. 435). Psychology was not in want of spokes, of course; then as now, the science contained many important fields, but lacking a defining rim and an organizing hub, the spokes – when not beating up each other like in a drum sticks tattoo – went each their own way in mutual disregard.

Though no longer by Lewes, who had died on the eve of his book's publication, serious attempts were subsequently made to address the problem. Latest in 1927, when two important texts were published with >crisis of psychology< in the title. One was Lev Vygotsky's *The Historical Meaning of the Crisis in Psychology*. Like Lewes, Vygotsky insisted on the necessity of a defining hub; or a >cell<, as he called it, after the vital hub in biology. »Anyone who could discover what a psychological cell is,« he wrote in his notebook, »would thereby find the key to psychology as a whole« (Vygotsky, 1978, p. 8). The other was Karl Bühler's *Die Krise der Psychologie*, in which Bühler promoted an ecumenical rule that should be mandatory in general psychology. In our metaphor, Bühler basically said that every spoke brings something to the wheel, no spokes should therefore be left out, but all assigned their rightful and important place in the whole.

So very close they were, but hardly had their ideas been presented before the world fell apart. Economic depression spread globally from the 1929 Wall Street crash, and in the wake of rising social suffering, Nazism descended over Germany, forcing the leading lights of German psychology into exile. When war and bloodshed ended, the epicenter of psychology had shifted from Germany to America; from psychology's Athens to its Rome, as the saying went, and what occupied the Romans were practical matters, not the theoretical concerns of the Athenians. This bias, unknown to physicists, is still with us.

Brave synthesizing attempts were still being made – among the major, William Stern (1938), Sergei Rubinstein (1959), and Klaus Holzkamp (1983) – but these were the exceptions. When general psychology was acknowledged at all, it was only in name, and only as a catalogue of spokes, like the content list of the standard beginner's textbook, no hub, no rim, no wheel. Did students find their curriculum piecemeal and incoherent, deep meta-philosophical explanations were offered, or, they were simply told that psychology was primarily a toolkit. And – as if by general agreement – the crisis of psychology was never mentioned again.

When the centennial for Wundt's laboratory called for a progress report this vow of silence had to be suspended, however, and forth it gushed. »A winter of discontent,« was how Jerome S. Bruner characterized the state of psychology in his Herbert Spencer Lecture (Bruner, 1976), later explaining that »psychology, the science of mind

as William James once called it, has become fragmented as never before in its history. It has lost its center and risks losing the cohesion needed ... to justify a division of labor between its parts« (Bruner, 1990, p. ix). »The whole exercise has fragmented into many sub-disciplines that have nothing to say to one another,« David Cohen agreed (Cohen, 1995, p. 237). »Ambiguous at best and chaotic at worst,« said Amedeo Giorgi (Giorgi, 1992, p. 46). »An intellectual zoo,« George A. Miller added (Miller, 1992, p. 40). Yes, the whole »enterprise shows a disturbing absence of that *cumulative* character that is so impressive in disciplines like astronomy, molecular biology, and genetics,« Paul Meehl lamented (Meehl, 1991, p. 3). Right, said Sigmund Koch and David Leary, who had been commissioned to edit APA's big centennial report, »after a hundred years of ebullient growth, psychology has achieved a condition at once so fractionated and so ramified as to preclude any two persons agreeing as to its >architecture<« (Koch & Leary, 1992, p. 2). »It seems to me,« Zeno Pylyshyn pondered, »that at least part of the reason that psychology is hard is that we don't have a good idea of what it's about – what it's a science *of*« (Pylyshyn, 1987, p. 97). It may not be about anything, Koch and Leary sighed, wittily comparing psychology to »a jumbled >hidden-figure< puzzle that contains no figure« (op.cit.).

With no hub, no wheel, no rolling cumulation, psychology became a walking dead in the eyes of the neighbors, on one side the culture-and-language crowd, on the other the brain-people, each gang eager to divide up and take over the territory. »Psychology itself is dead,« declared Michael Gazzaniga, speaking for both, and sending a shiver through the graveyard. Then the famous neuroscientist smugly added, »the odd thing is that everyone, but its practitioners knows about the death of psychology« (Gazzaniga, 1998, p. xi–xii).

Fake news, it is, of course, the death of psychology, but also a call for us to resurrect the quest for a general psychology, which, by outlining the basic architecture – the Lewes-wheel – of our rich and complex science, can offer something more than just silence to the crisis of psychology. In other words, it's time to renew James' hope and stop the whimper. »It is never too late to be what you might have been,« as Lewes' wife famously says on a fridge magnet of mine.

Correction

While it is hard to deny that psychology still resembles a broken mirror, it is not actually true that psychology has been without cumulation. On the contrary, if we take the long view, and general psychology should, no science has probably been more cumulative than psychology. From ancient times to the present day, the field has been a winding road of points of view, each addressing the previous one, often confrontational, but also adding to and enriching the ongoing conversation.

Neither is it true that psychology has been in want of hubs. On the contrary, the historical record shows an abundance of proposed hubs – from the *anima* of ancestral shamans and the *soul* of Plato to the *psyche* of Aristotle and the *intentionality* of Brentano; from the *reflex* of Descartes and Sechenov to the *behavior* of Watson; from the *subjective experience* of Locke and Wundt to the *mind* of Hume and the streaming *consciousness* of James; from the *stimulus-response* of Pavlov to the *activity* of Leontiev and the *word-informed activity* of Vygotsky; from the *existence* of Kierkegaard and Jaspers to the *meaning* of Frankl and the *person* of Stern – all with a valid claim to importance. If – following Bühler’s rule – all should be recognized, and none left out, the only question remains which one should be made the foundation stone of the building, Vygotsky’s key to the whole psychology?

Returning to our Highgate seminar, what did Lewes think?

Acting and knowing

»We live, feed, and move. We, feel, think, and will,« Lewes writes; and, as »the only agent known is the organism,« »psychology is a branch of the general science of life« (Lewes, 1879, p. 9–11). This seems like vintage Aristotle; the Greek master had founded the world’s first naturalist psychology precisely as a biology, based on the functions and faculties of the living agent, moving, feeding, sensing, and – eventually – thinking. Relative to Aristotle, Lewes made two provisos, however. »Psychology is somewhat less, and somewhat more, than the subjective theory of the organism,« he writes (*ibid.*, p. 25).

Aristotle had made no clear demarcation between the psychological and the bodily functions, naming them all *psyche*, defined as the agent’s striving toward a preset goal. When, however, in the subsequent conversation, Galileo showed that striving was not how physical phenomena worked, the soul-body distinction was forced, and the psycho-physical problem born. An example of progressive cumulation, but also a call for a more stringent demarcation of psychology. We therefore, Lewes writes, »need to specify the difference which leads us to mark off Psychology as a branch of the general science of life« (*ibid.*, p. 9). Psychology can only be a subdomain of biology.

Aristotle’s had been a psychology of acting, but after Galileo, beginning with Descartes and Locke, it became a psychology of knowing. Following this tradition, Lewes marks off psychology as »the science of sentience«; concerned »solely with the sentient functions and faculties of the organism« (*ibid.*). This is good, but only if we don’t forget acting. Splitting off knowing from acting will destroy any general psychology. Psychology must be like tennis, the player not only receiving, but also serving. As famously argued by John Dewey, in the reflex arc the efferent and afferent becomes entwined like a Möbius band, and this goes for the molar subject-object activity as well;

mind and behavior, the cognitive and the conative, are basically an inseparable set. If this makes action a species of sentience (or sentience a species of action), a single term to cover both meanings would be welcome.

The psychologist and Aristotle-scholar Franz Brentano (1874) found it in the term ›intentionality‹, which aptly has been paraphrased as ›aboutness‹. Every psychological phenomenon is about something, every subject posits an object, he said in his famous definition, and thus made the circle back to Aristotle's purposive agent. So did William James in his well-known definition: ›The pursuance of future ends and the choice of means for their attainment are thus the mark and criterion of the presence of mentality in a phenomenon‹ (James, 1890, p. 8). As it can be said to catch both meanings, acting and knowing, let's call it James' composite.

Epistemology vs epistemics

The reason Lewes opts for ›sentience‹ rather than the traditional ›consciousness‹ – the favorite of James and everybody else – is worth noticing. Consciousness, he explains, is tied in with too many special connotations and he needs a more general generic term. In general psychology, the choice of the generic term is of the utmost importance.

In my own work, where ›sentience‹, ›intentionality‹, ›mind‹, and ›human consciousness‹ have each been given a specific and different meaning, I had to continue Lewes' search for an inclusive generic term. In the end, I opted for psychology as ›*the science of epistemics*‹, defining ›epistemics‹ as ›the ways the world can be known to beings to which the world can be known, known in the widest possible sense, conatively as well as cognitively‹ (Engelsted, 2017). Awkward and unfamiliar, the term is at least connotation-free; further, it enables a much-needed distinction between psychology and philosophy.

In philosophy, epistemology is the jewel in the crown. It is traditionally defined as the investigation of the nature and possibility of knowledge, which explains why psychology for ages was classed as a minor field of philosophy and taught by philosophers. The content being the same, *i.e.*, knowing, it was difference in method that in the 1870's finally enabled psychology to exit philosophy. By leaving the armchair and adopting measurement and experiment from the inventory of natural science, psychology broke free from the philosophy departments and declared itself a science. Now a defining part of psychology's self-identity, a preoccupation with method has ruled the science ever since. This is not wrong as such, but that only makes it worse, as the emphasis on method sidesteps the real issue and hides the true – much subtler and much deeper – difference between philosophy and psychology. It basically comes down to this. The *nature of knowledge* and the *possibility of knowledge* are two radically different proposi-

tions. The first takes knowledge as a given, the latter calls its existence into question. This is the true watershed that separates psychology from philosophy. Philosophy concerns itself with *epistemology*, the possibility of knowledge; psychology concerns itself with *epistemics*, the reality of knowledge and how it comes about. Without this distinction, a confusion of issues easily creeps into psychology, as the age of postmodernism bears witness to. Adopting the term epistemics thwarts this confusion.

Two cultures

Lewes' second proviso makes psychology *more* than biology. »Our science must seek its data not only in biology but in sociology; not only in the animal functions of the organism, but in the faculties developed under social developments«, he writes (Lewes, 1879, p. 51). »It is therefore to History and the observation of man in social relations that we must look« (ibid., p. 61).

This may, strictly speaking, reflect a bias, still dominant among psychologists, to sloppily equate biology with its subdomain physiology. If biology is the general science of life, obviously, human society and history must be included. Aristotle got that right, defining us as a *zoön politikon*, a societal animal; but since he is not present to protest, let's not be nitpicking; we understand what Lewes means and there are more urgent issues.

Long before it was codified by Wilhelm Dilthey as *Naturwissenschaft*, which *explains*, and *Geisteswissenschaft*, which *understands*, the world of human knowledge had been divided into fields dealing with physical *causes* and fields dealing with human *meaning*. Though not unreasonable, the divide is quite unforgiving, leading to the two incompatible cultures famously described by C. P. Snow. While this sits well with most, for instance the culture-and-language crowd and the brain-people mentioned above, it is a real problem for psychology, which has a foot in each camp. Wilhelm Wundt chose to face that challenge by simply making two different psychologies; first his *Physiologische Psychologie* based on psycho-physical laboratory experiments, then his multi-tome *Völkerpsychologie* based on cultural studies; and this division still basically rules psychology.

Two psychologies are not one, however. The touchstone of general psychology is precisely the claim for *one* psychology, the call for one basic architecture to hold both physics and intentionality, Galileo and Aristotle, physiology and culture, cause and meaning. By asking for Biology and History both, Lewes makes that claim.

Biology and History are the cue words for our other participants to come forward. As an adulated philosopher, a close friend of Lewes, and the lost love of George Eliot, Herbert Spencer steps first.

Evolution

General psychology is basically an ordering of the different species of knowing, knowing in the widest sense. In botany, chaos and crisis were turned to rapid progress when people agreed on the taxonomy based on sexual organs Linnaeus was offering, and it says a lot about the dedication of the 18th century botanists that consensus was achieved despite the *artificial* character of Linnaeus' system. One could hope something similar would follow if taxonomic agreement was reached in psychology. In psychology, where *ad hoc* systems, Wundt's for instance, have all failed, a similar happy outcome would, however, be too much to expect unless a *natural* system was found.

Spencer found the method to that natural system. In 1855, laying down an all-important instruction for general psychology to follow, he wrote in *Principles of Psychology*: »Mind can be understood by showing how mind has evolved« (Spencer, 1855/1870, p. 271). In other words, evolution is the key to the mind's natural order.

Spencer's evolutionary book predated, anticipated, and prepared the ground for Darwin's *The Origin of Species*. Darwin did not discover evolution. Jean Baptiste Lamarck did. In 1809, the year Darwin was born, Lamarck in *Philosophie Zoologique* presented a completely naturalistic, elaborate, and essentially correct theory of life's evolution, covering both its first beginning as a physical accident in a chemical soup, and apes descending from the trees to become human beings. Spencer learned about it from a critical review written by Charles Lyell, Darwin's mentor and protector, and became an evolutionist.

What Darwin discovered was *natural selection*, the invisible hand, or market mechanism, that propels evolution. He got the idea from Thomas Malthus' 1798 tract *On Population*, which claimed that there would always be too little food to feed all, and in the social struggle some would necessarily have to go down in squalor, disease, and early death. Reading this in 1838 made Darwin's theory click. Like the breeder weeds out the less suited specimens, so does the inevitable competition in nature, he said.

Twenty years later Darwin had not yet made his theory public when Wallace made exactly the same discovery, and, unknowing of Darwin's work, asked him of all people to see it published!

A grave embarrassment was averted only by the adroit intervention of Lyell, who organized a joint presentation of papers, which Darwin – Lyell breathing down his neck – speedily followed up with the book that rode him to fame and a burial place in Westminster Abbey.

The term is of a later date, but Malthus was the originator of the *Social Darwinism* that quickly gained the theory of natural selection popularity as it provided a scientific legitimization of crass social inequality, white supremacy, and colonialism. Spencer read Malthus and became a rabid Social Darwinist. So did Wallace. Having read Spencer's

Social Statics, he wrote: »It is the same great law ... in the struggle for life, which leads to the inevitable extinction of all those low and mentally undeveloped populations with which the Europeans come in contact« (Wallace, 1864, p. clxiv-clxv). After reading Darwin, Spencer in *Principles of Biology* came up with the phrase that came to define Darwinism, and which, on Wallace's suggestion, Darwin adopted from the fifth edition of *Origin* as the more accurate: *Survival of the fittest*.

Impact of Darwinism

»[T]he idea of evolution had been bred in my very bones – as was the case with all my contemporaries,« wrote the Berlin psychology professor Carl Stumpf (cf. Murchison, 1930, p. 409). Possibly true, it didn't show up much in the subsequent works of the psychologists. Except in America.

It was reading Darwin that brought William James to science. First on a zoological expedition to South America; and, when that was a grave disappointment, and he was sent to Europe by his family to recover from depression, to psychology, the new science. In Germany he visited the Psycho-physical laboratories of Wundt and his compatriots, and on his return he started a psychology course at Harvard. The textbook he published for that course in 1890, *Principles of Psychology*, brims with the spirit of evolution; by a wide margin, it is still the most fresh and inspired introduction to psychology and shows what general psychology might have been. Only this didn't play out; outmatched by the »brass-instrument and algebraic-formula psychology« that came to rule the day and filled James »with horror«, he signed over his chair to a German professor and left the »measly little science.«

Still, the cat was out of the bag. Edward B. Thorndike, whose experimental chickens James had kept in his home when the university balked, and who later won international acclaim for his conditioning experiments with escaping cats, was only one of many students inspired by James. With Spencer as America's First Philosopher, and *Survival of the fittest* its prime ideology, evolution became a leitmotif in American psychology.

Forth and back

Survival of the fittest is a one-size-fits-all formula and leads to a one-size-fits-all understanding of life. That is, an emphasis on the basic uniformity and continuity of all lifeforms. Besides Malthus, this notion – adopted from Lyell's geological Uniformitarianism – had been the axiomatic key to Darwin's discovery, (Wallace's too), and Darwin subsequently devoted *The Descent of Man*, 1872, to demonstrate that every human trait was to be found among the animals too, if to a lesser degree. The idea opened a whole

new front in psychology, as it meant that the study of animals offered a completely new path to the understanding of the human being. Darwin-inspired John B. Watson grabbed it with both hands; in his 1913 *Manifesto of Behaviorism* he wrote: »The behaviorist, in his efforts to get a unitary scheme of animal response, recognizes no dividing line between man and brute« (Watson, 1913).

Darwin's and Watson's »no dividing line« is the first of two crucial steps. For the second, we return to Wallace, who suddenly remembered. As a professional collector of birds, butterflies, and beetles, he had spent long periods living with the South American Indians, and he now recalled that they had been equal to the white man in every capacity, and not, as Social Darwinism claimed, a breed belonging to a lower rung on the evolutionary ladder. Rather than the gradual ascent from the ape to the savage to the British gentleman at the summit, as had now become the accepted view, there was a leap landing *all humans* on the far side of a man-brute divide. I defy you to upset your own doctrine, Darwin wrote in despair; and it didn't help that his two closest allies, Charles Lyell and Thomas Huxley, sided with Wallace. Wallace sums up the controversy:

»On this great problem the belief and teaching of Darwin was, that man's whole nature – physical, mental, intellectual, and moral – was developed from the lower animals by means of the same laws of variation and survival; and, as a consequence of this belief, that there was no difference in *kind* between man's nature and animal nature, but only one of degree. My view, on the other hand, was and is, that there is a difference in kind« (Wallace, 1905, vol. 2, p. 17.).

Who was right? Bühler's rule applies here: they were both right. It is equally true that humans and animals are the same, and that they are not. The task is to show how this is possible.

Now it so happens that this continuity-discontinuity conundrum was addressed by Aristotle in the world's first general psychology.

His solution was a Russian doll model with psyches nesting inside psyches. *All life*, defined by feeding (energy-consumption) and reproduction, was the big matryoshka; inside which was the smaller doll of *animal life*, defined by locomotion and perception; inside which was the still smaller doll of *higher animal life* (mammals), defined by dreaming and imagination; inside which was the smallest doll, the *human being*, defined by societal living, language, and human consciousness, or reason. The human being is unique in the model; but is also a mammal like the other mammals; an animal like the other animals; and a living being like all the other living beings.

Aristotle had no notion of evolution but applying Spencer's instruction – showing how mind has evolved – to Aristotle's taxonomy would surely point the way to a general

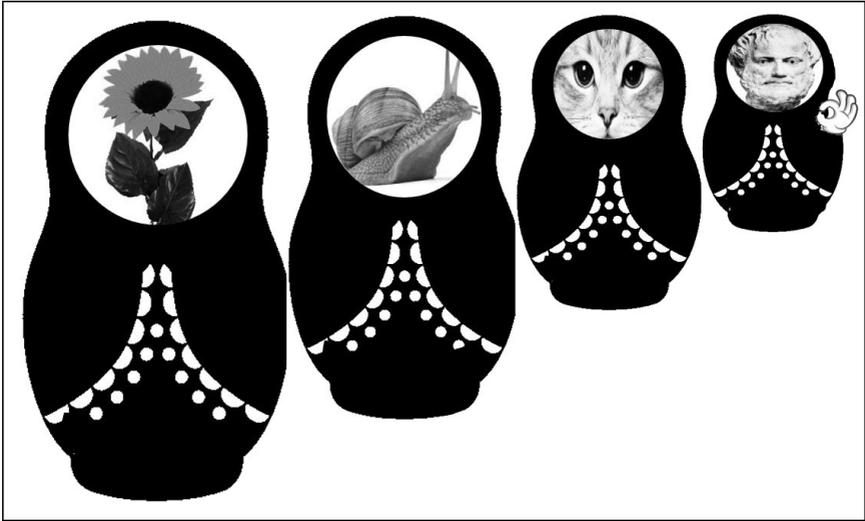


Fig. 2: Aristotle's Russian doll

psychology. The doll-model still does not explain, of course, how evolution got from one doll to the next. A general psychology would want an answer to that, and ideally one satisfying *both same and not*, degree and kind, a case of *innovative reuse*, we could call it.

The division of labor

The mention of societal living calls forth Karl Marx. At this very spot at Highgate, his lifelong friend and comrade-in-arms, Friedrich Engels, summed up his contribution, saying, »just as Darwin discovered the law of development of organic nature, so Marx discovered the law of development of human history« (Engels, 1883). It is a fair comparison. In his 1927 book on the crisis of psychology, Vygotsky wrote that »the creation of a general psychology would be the only justifiable application of Marxism to psychology« (Vygotsky, 1927, p. 330). If we want to place history, society, and human consciousness on our general psychology map, bringing in Marx is certainly justified; there has been little else progress to show in these matters.

Marx's important achievement was to add a second *division of labor* to the first famously expounded by Adam Smith in his seminal 1776 *Wealth of Nations*. The first was the old story of humans taking up tools and working, then specializing into trades – the baker did this, the tailor did that – followed by barter and exchange, in the process creating the human society as a trading platform and marketplace. Smith's point was

that with division and specialization productivity rose and with it the national wealth. Marx didn't disagree, of course, but pointed to another and more primary source of wealth, namely labor's ability to produce a surplus; that is, the capability of the worker's production to exceed his consumption. Capitalism with its division of labor between workers producing the surplus, and capitalists investing this profit in further cycles of growth, was the perfect example, but Marx recognized the same principle of surplus labor generated wealth in the previous historical feudal and slave-owning societies, which defined the human society as a class divided and surplus driven growth engine.

This, of course, is political economy and sociology, the human as a *zoön politikon*, Aristotle's societal animal. How it also became psychology, the human as a *zoön logon echon*, Aristotle's animal with consciousness and language, owes to the wild geniuses of German Romanticism. J. G. Fichte basically argued that consciousness is awareness turned inside out, seeing yourself from the outside, alienation; and G. W. F. Hegel subsequently saw a prime example of this alienation in labor where the worker is dispossessed of his product. Like most of his generation, Marx was taken in by Hegel's erudition and dialectical method, which became the guide for his own economic and political work, centered on surplus labor. Rejecting the widespread accusation that surplus labor was theft and should be abolished, Marx identified it as the very basis of human society and the foundation of human consciousness.

While the suggested psychology of alienation is none too clear, it is highly evocative. We don't have many intelligent inroads to human consciousness, but the notion that consciousness and society holds a deep secret in common is certainly one. Excavation will be needed, but it seems a fair bet that treasure general psychology can ill afford to ignore is buried under the Easter Island bust.

Status

What has the graveside seminar brought us? Let's make a list.

- *Lewes' wheel* – the general layout or architecture of psychology with rim, hub, and spokes, *aka* general psychology
- *Vygotsky's cell* – the entity or relation that is defining of a scientific domain
- *Bühler's advice* – the belief that everybody has a valid point, which should be included
- *James' composite* – the necessity of bringing together knowing and acting in one understanding
- *Lewes' One-psychology claim* – the need for psychology to encompass cause and meaning both and span the nature-culture divide
- *Spencer's instruction* – that the evolution and the phylogenetic sequence is the guide to the mind

- *Wallace's two-step* – the recognition that humans are the same as animals, and they are not, preferably in that order
- *Innovative reuse* – the solution that can explain same and not
- *Aristotle's Russian doll* – the taxonomic nesting model that identifies four major subdomains of psychology and accommodates Spencer's instruction and Wallace's two-step
- *Marx's buried treasure* – the deep, but elusive connection between human consciousness and human society

It is my belief that these bullets – if not all, then certainly most – are essential for general psychology. At the present time where an agreed-upon general psychology is just a phantom, possible solutions are at least as important as final solutions. Following Bühler's advice, many should be welcomed to the table; wise or not, it will take more than one blind man to get this elephant right. As an example of a possible solution built on the above bullets, the following is a short sketch of my own general psychology proposal (Engelsted, 2017).

II. A Possible Solution

Built on Aristotle's nesting model, my general psychology becomes a four-wheel drive, dividing the domain of psychology into four subdomains in evolutionary sequence. The subdomains are the four fundamental ways of knowing:

- *Sentience*, common to all *living beings*, psychologically posits *the present moment*, and is the realm of *Heraclitus* and *Fechner*.
- *Intentionality*, common to all *animals*, psychologically posits *the future*, and is the realm of *Aristotle* and *Brentano*.
- *Mind*, common to all *mammals*, psychologically posits *the past*, and is the realm of *Locke* and *Freud*.
- *Human Consciousness*, unique to the human being, psychologically posits *the view from without*, and is the realm of *Fichte* and *Hegel*.

As each subdomain constitutes a wheel of its own, it requires an explanation of its own.

Sentience

Sentience is an original feature of the living cell and presumably common to all life. As the ability to sense change while change is happening, it places the organism in

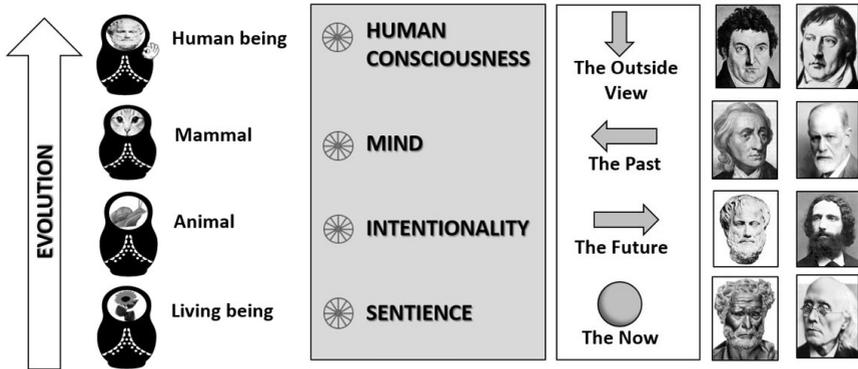


Fig. 3: My general psychology in outline

a phenomenological real-time bubble, the *present moment* or *now*, less than a second across. The ongoing change – the everything flows-reality of Heraclitus – gives its bearer an awareness of presence, which, inviting confusion, is sometimes referred to as consciousness.

When philosophers call sentience the hard problem it is an understatement. Its phenomenological spokes have been well-described and listed as secondary sense qualities, qualia, raw feel, and the >what-it-is-like-to-be< quality of Thomas Nagel (1974), and its rim has been quantitatively measured since Fechner, but what its hub is remains a deep mystery. That it is anchored in the weird nether world of quantum physics seems a safe guess, though, and eventually we, or the physicists, will get it.

Intentionality

To Aristotle, Brentano, and James, aboutness and purpose define the ideal nature and essence of *the psycho-logic*. I think this is right on, but there is this problem. When Hume correctly argued that time and space intuition could not be derived from the senses by induction (*a posteriori*), how to square the ideal and the material became a problem. Kant's conclusion that time and space must therefore be *a priori* forms of intuition, belonging to the mind itself rather than to sensory causation, was not wrong, but neither was it helpful. It stopped psychology in its tracks for decades until Fechner showed that at least sensory causation could be measured. Today the problem is largely ignored, but if we want *one psychology*, rather than several, there is a possible solution which both accepts Kant's *a priori* idea and, by explaining intentionality as a corollary to the second law of thermodynamics, ties hardcore ideality with hardcore physics.

The second law states that entities more complex than their surroundings must dissolve in time (entropy) unless fed with new energy from the outside. The living being is such a complex entity and must be fed to continue its existence. The smallest *natural unit of life* is therefore the organism *and its source of energy*. Animals, to get to their necessary food, must move. If they move spontaneously, which they do, and if there is food to be reached, they will eventually reach it. By operational definition, this makes the sheer movement goal-oriented and intentional in both meanings: *intentionality* as aboutness and *intentionality* as purpose. The ideal in its first instance is simply a relation in the world defined – *a priori* – by the physical setup that makes life possible (Engelsted, 1989).

We shall name the spatial and temporal separation that keeps the agent and object apart *the interspace*, and contrast it to *the interface*, the boundary between organism and environment across which stimuli and responses are exchanged. An empiricist legacy, the interface has preoccupied psychology since the 17th century. The interspace, however, is essential for psychology to recognize and include. It is traversed in four distinct stages, the same for all animals from the lowliest amoeba to the human shopper.

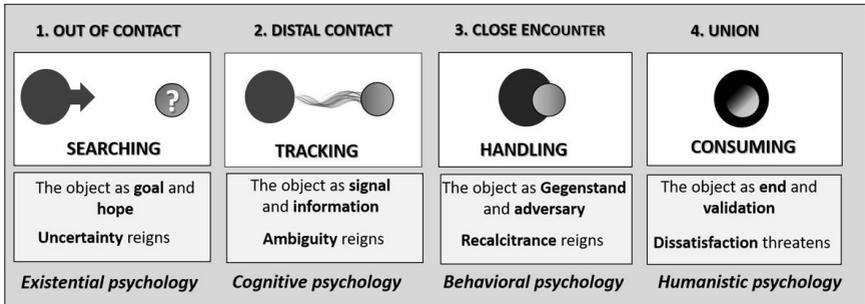


Fig. 4: The four fundamental steps through interspace

First the subject sets out into the blue in search of its object, which takes the form of goal and hope. Next, with luck, informative traces, chemical, mechanical, or electromagnetic, are picked up to guide the subject toward the object, now appearing as signal and information. When tangible contact is reached, the subject tries to grab and handle the object, which now shows itself as an intractable thing of its own. Finally, if overcome, the object is consumed, marking the end and validation of the whole sequence. Observe that the four stages are recognized in the major historical fields of psychology: Existential psychology, the searching first; cognitive psychology, the informing second; behavioral psychology, the handling third; and humanistic psychology, the self-con-

gratulating fourth. Existential and humanistic psychology are, of course, traditionally reserved for humans able to talk with themselves, but the hopeful plunge and its subsequent validation resides in the activity itself prior to any conscious reflection and is shared throughout the animal kingdom.

It is the first stage – the existential plunge, positing the ideal realm of aboutness, purpose, hope and anxiety – that is the defining hub of the *psycho-logic*. The existential plunge has its counterpart in the mathematical Axiom of Choice, which opens for a new and deeper understanding of both psychology and mathematics, as first ingeniously explored by my colleague and friend Jens Mammen (2017).

Mind

With mind, the psycho-logic – first and always a relation in the world – is duplicated as an *internalized representation*. In my native language, which Vikings brought to England, *minde* means reminiscence, and this is basically what mind is, John Locke's white paper upon which experience is recorded. Hume aptly called it a theater in the head in which plays can be rehearsed and performed, and the possession of such imagination – together with the nocturnal dream – was how Aristotle defined the psyche of the higher animals, here mammals.

If we follow Spencer's instruction, I believe that precisely *the nocturnal dream* and *the mammal* are keys to how the mind has evolved (Engelsted, 1977).

A twirl on the primordial stimulus-response string – E. C. Tolman's intervening variable, black box, and keeper of the cognitive maps of rats and men – is the origin and hub of the mind. Its first beginning is still around in form of REM-Sleep. Shared by all mammals and enabling them to sleep through, REMS is defined by two features. The vivid and emotional imagery of the dream and the sudden loss of muscle tone (cataplexy) that makes overt activity impossible. They are also found in narcolepsy, which is basically a REMS episode elicited in the wake state by strong emotional stimuli.

It is from this simple mechanism where the response is blocked but not the impulse, which careens through neural centers, evoking imagery, that I suggest mind evolved as a brief >thinking pause< inserted between stimulus and response.

With olfaction being the chief sense modality of the mammal's little Cretaceous night-living ancestor, it developed as olfactory centers expanded into the limbic system, which became a storage of images and reminiscences, and is an example of innovative reuse. Chemistry-based olfaction cannot by itself form images, but it can borrow and tag images from the wave-based modalities vision and audition; the uncanny ability smells have to conjure up images of past situations in vivid and emotional detail is known to most. As the present came into being with sentience, and the future with intentionality,

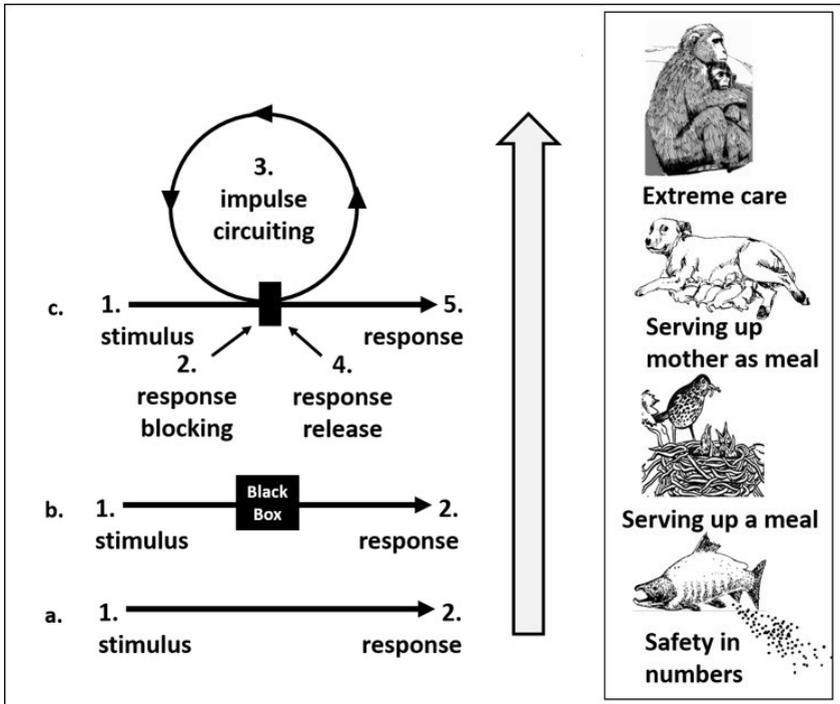


Fig. 5: The evolution of mind and mammal

this is, in fact, how *the past* came into being as a psychological concept. The impulse circling the limbic carousel, consulting past experience before again released in a now more considered response, created the mind, and mind made the mammal the smartest animal around.

Mother grounds life-world

REMS is not the only defining feature of the mammal, however. Co-evolving with mind is the unique characteristic that has given the mammal its name. Feeding cannot indefinitely fend off the fate prescribed by the second law of thermodynamics. Even before death by aging was introduced in early evolution, if accident or disease didn't kill you, a predator eventually would. For life to continue, reproduction – making copies while still time – therefore became as important as feeding. There are two different strategies of reproduction; at the lower end of evolution, a quantitative, emphasizing bulk and chance; at the upper end, a qualitative, emphasizing small outputs and selective care.

The mammal, feeding the young from its own body, marks a leap in this progressive evolution.

As its food, and its means to attain it, defines an animal's interspace, and as the first instance grounds the animal's *life-world*, with the mammal, mother becomes ground. With mother as simultaneously best friend, prey, and meal, and nursing and care co-evolving with the mammalian mind with its blocked responses, impulse-diversions, dreams, and imageries, the mammals entered the inherently social and dynamic (twisted) life-worlds so vividly chronicled by Melanie Klein and Sigmund Freud. Only they couldn't tell about it until the human stage was reached.

Human consciousness

That it was brains and speech in the first place that brought the human society into existence, and took its time about it, has been the standard story among materialists and scientists since ancient Greece. Still is today. I believe it is the other way around; that Aristotle's societal animal, rather than arriving late, is the key to his animal with reason and language (Engelsted, 1984). To get to the root of human consciousness, we must therefore first have a clear notion of what the human society is.

Marx got it right when he took capitalism as model and pictured society as a wealth-producing and wealth-investing social formation based on class-divided surplus-labor; but, subscribing to the standard story, he only got it halfway right. It somehow seems wrong to date the beginning of the human society to the arrival of agriculture and class society 10.000 years ago, when the human being by that time had been around for perhaps a million years or more. If nothing else, your aesthetic sense demands that the human being and the human society arrive together. Is that possible to argue? It is; the gist is this.

The first human investment

Humankind's first social organization, *the hunters and gatherers*, with males doing the hunting and females doing the gathering, is a division of labor. Is it also a division of labor of the surplus-generating kind? Indeed, it is. Among most non-arctic hunters and gatherers, plant food makes up the bulk of the diet, and women collect the better part of the food. Not only do they provide for themselves and their children, they are able to give to the men too. If humankind started like this, it did not make hunting less important; on the contrary, it has been highly significant. Besides providing an important – and savored – dietary supplement, hunting has performed an important social role as shared meat and shared experience solidified male alliances and stabilized the

social order. We can, if we so wish, keep the traditional story of how man the hunter captained our exodus from the animal world; only it should not obscure the fact that females provided most of the sustenance and did most of the work.

If the female's work is surplus labor, going beyond her own reproductive needs, is it also of the *wealth-producing* and *wealth-investing* kind found in the later historical societies? Arguably, it is. For obvious reasons, migrating hunters and gatherers want no more material property than they can carry. All wealth is not material, however, nor is all capital. The surplus produced by the women was first and foremost invested in and accumulated as *human capital*, and I suggest that the very first investment made was in male hunting!

Hunting must have been a near impossible trade to take up for the little humanoid; clever, super-strong, and ferocious, the meat-loving chimpanzee still only manages to bring in 2 percent meat in its diet. With the women's surplus as seed money, and with their continuous back-up, the pioneering entrepreneurs had a chance, however, and in time the human males developed sufficient skills and experience to become big game hunters. This means that with the sexes as proto-classes, the hunters and gatherers fully fulfil the definition of the human society as a wealth-producing and wealth-investing, class-divided social formation based on surplus labor. Making a lot of sense, congruent with known facts, and as good an explanation as any around, the proposition should be uncontroversial. Let's now proceed to the wild stuff.

The Fall

Once the pivotal role of the females is recognized, another obvious observation follows. Surplus labor is not something extraordinary arriving with the human being; on the contrary, it has been around forever! Reproduction – giving birth, nursing, feeding, and taking care of the young – is surplus labor, if any is, and from mammals, it takes up a large part of the females' hours. If, however, human surplus labor is both the same as the old reproductive surplus labor, *and not*, a case of innovative reuse, in other words, what was the innovation?

Since one reproductive cycle must end for a new to begin, mothering – as a law of nature – has an expiry date. Whether it takes weeks or years, when the young can fend for themselves, and latest at the onset of sexual maturity, they lose their status as legitimate receivers of motherly care and are turned away. This strict limit to female surplus labor is transgressed when females start to supply prospective male hunters. The breach of a natural law is the innovation.

There is a first of everything; if we try to imagine how the transgression first happened, with wonderful irony we end up with a paraphrase of the old story of the Fall of Adam and Eve, where Eve gives Adam forbidden fruit, whereupon their eyes are opened,

and they are cast into the human existence and a life of labor. Leaving here aside the cascade of prehistoric steps, which logically followed (Engelsted, 2017, pp. 95–111), the psychologically important thing is the opening of the eyes, the god's-eye-view that is the defining mark of the human consciousness.



Fig. 6: Secret of human being

Confronted by the needy supplicant, whose call says he is a child, and manly attributes says he is not, the females were in a fix. The future existence of the human being hanging on a solution to the contradiction, I suggest the females ripped a page from Hegel, and – with the humorous giggle evoked by children's riddles – solved the problem by seeing him as a negation of the negation, *a non-non-child!*

The two negatives do not cancel out each other; the non-non-insert marks a new stage where things are seen simultaneously from two contrary positions; turned inside out, as it were. This view from without – the god's-eye-view and Hegel's alienation – is the opening of the eyes and the key to the human consciousness and language.

Following the non-non-child, the objectifying estrangement spreads. The food becomes non-non-food; not only the thing of your desire, but also an objective thing with properties of its own. The mother becomes a non-non-mother; not only the caring mama as before, but also a person who can look at herself from the outside – and wonder. Observe that it is the new objectivity-perspective that brings subjectivity into the world. In animals, the subjective and the objective are indissolubly meshed; in humans, the sides can come apart, and each be recognized for what it is; objectivity and subjectivity are human prerogatives. Finally, the estrangement spreads to the vocal and non-vocal communication that links together mother and young; as the signal becomes a non-non-signal, at the same time bound to the situation and going beyond, the sign is born. It sounds the same, but a rift has occurred and with it the new realm of language

is opened. This is only the beginning, of course, but the decisive step has been made to give both the humans and natural selection something to work on; language now being the template introducing human consciousness to young children, brain-wise prepared for it by natural selection, as famously described by Vygotsky. And observe, in this account, human society – the labor surplus thing – and human consciousness and language arrive together as an interconnected set.

The human world of mind-products

The psycho-logic is first (and always) a relation in the world. Secondary, it is an internalized representation in the mind of the relation in the world. With the objectifying properties of the human consciousness, the mind's internalized representation can be re-externalized. As the world was brought into the mind, mind is now brought back into the world as mind-products, the plethora of external human products carrying meaning and purpose from tools and garments to laws and institutions. Today the human world is so replete with mind-products that it can rightfully be called a mindscape. Language was the first mind-product, bringing the psychologic from the mind back into the world in form of songs, tales, and narratives about the psycho-logic. With its proposal that the psycho-logic is parsed into four subdomains, sentience, intentionality, mind, and human consciousness, this general psychology paper is just another example. Hopefully it is also proof that general psychology is a worthwhile pursuit. So, join the invitation to walk with the ghost; the domain of psychology, intricate and intriguing, should not remain uncharted and unclaimed.

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