

**The Foundation Stone of Psychology and Philosophy--A Critical Review of 'On Certainty' by Ludwig Wittgenstein (1969)(1951).**

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ABSTRACT

A critical review of Wittgenstein's 'On Certainty' which he wrote in 1950-51 and was first published in 1969. Most of the review is spent presenting a modern framework for philosophy (the descriptive psychology of higher order thought) and positioning the work of Wittgenstein and John Searle in this framework and relative to the work of others. It is suggested that this book can be regarded as the foundation stone of psychology and philosophy as it was the first to describe the two systems of thought and shows how our unshakable grasp of the world derives from our innate axiomatic System 1 and how this interacts with System 2. It was a revolution in epistemology since it showed that our actions rest not on judgements but on innate undoubtable axioms leading directly to action. I situate the work of Wittgenstein and Searle in the framework of the two systems of thought prominent in thinking and decision research, employing a new table of intentionality and new dual systems nomenclature.

Those wishing a comprehensive up to date framework for human behavior from the modern two systems view may consult my article The Logical Structure of Philosophy, Psychology, Mind and Language as Revealed in Wittgenstein and Searle 59p(2016). For all my articles on Wittgenstein and Searle see my e-book 'The Logical Structure of Philosophy, Psychology, Mind and Language in Wittgenstein and Searle 367p (2016). Those interested in all my writings in their most recent versions may consult my e-book Philosophy, Human Nature and the Collapse of Civilization - Articles and Reviews 2006-2016 662p (2016).

"If I wanted to doubt whether this was my hand, how could I avoid doubting whether the word 'hand' has any meaning? So that is something I seem to know, after all." On Certainty p48

"But I did not get my picture of the world by satisfying myself of its correctness: nor do I have it because I am satisfied of its correctness. No: it is the inherited background against which I distinguish between true and false." (OC p94).

"Here we come up against a remarkable and characteristic phenomenon in philosophical investigation: the difficulty---I might say---is not that of finding the solution but rather that of recognizing as the solution something that looks as if it were only a preliminary to it. We have already said everything.---Not anything that follows from this, no this itself is the solution!....This is connected, I believe, with our wrongly expecting an explanation, whereas the solution of the difficulty is a description, if we give it the right place in our considerations. If we dwell upon it, and do not try to get beyond it." Zettel p312-314

"Now if it is not the causal connections which we are concerned with, then the activities of the mind lie open before us." "The Blue Book" p6 (1933)

"There must be no attempt to *explain* our linguistic/conceptual activity (PI 126) as in Frege's reduction of arithmetic to logic; no attempt to give it *epistemological foundations* (PI 124) as in meaning based accounts of *a priori* knowledge; no attempt to characterize *idealized* forms of it (PI 130) as in sense logics; no attempt to *reform* it (PI 124, 132) as in Mackie's error theory or Dummett's intuitionism; no attempt to *streamline* it (PI 133) as in Quine's account of existence; no attempt to make it more *consistent* (PI 132) as

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in Tarski's response to the liar paradoxes; and no attempt to make it more *complete* (PI 133) as in the settling of questions of personal identity for bizarre hypothetical 'teleportation' scenarios." " --Horwich 'Wittgenstein's Metaphilosophy'.

"What sort of progress is this—the fascinating mystery has been removed--yet no depths have been plumbed in consolation; nothing has been explained or discovered or reconceived. How tame and uninspiring one might think. But perhaps, as Wittgenstein suggests, the virtues of clarity, demystification and truth should be found satisfying enough" --Horwich 'Wittgenstein's Metaphilosophy'.

First, let us remind ourselves of Wittgenstein's (W) fundamental discovery –that ALL truly 'philosophical' problems (i.e., those not solved by experiments or data gathering) are the same—confusions about how to use language in a particular context, and so all solutions are the same—looking at how language can be used in the context at issue so that its truth conditions (Conditions of Satisfaction or COS) are clear. . The basic problem is that one can say anything but one cannot mean (state clear COS for) any arbitrary utterance and meaning is only possible in a very specific context. Thus W looks at perspicuous examples of the varying uses of the words 'know' and 'certain', often from his 3 typical perspectives of narrator, interlocutor and commentator, leaving the reader to decide the best use (clearest COS) of the sentences in each context. One can only describe the uses of related sentences and that's the end of it—no hidden depths, no metaphysical insights. It is truly sad that most philosophers continue to waste their time on the linguistic confusions peculiar to philosophy rather than turning their attention to those of the other behavioral disciplines and to physics, biology and mathematics, where it is desperately needed.

W wrote this 'book' (not really a book but notes he made during the last two years of his life while dying of prostate cancer and barely able to work) because he realized that G.E. Moore's simple efforts had focused attention on the very core of all philosophy--how it's possible to mean, to believe, to know anything at all, and not to be able to doubt it. All anyone can do is to examine minutely the working of the language games of 'know' and 'certain' and 'doubt' as they are used to describe the primitive automated prelinguistic system one (S1) functions of our brain (my K1,C1 and D1) and the advanced deliberative linguistic system two (S2) functions (my K2, C2 and D2). Of course W does not use the two systems terminology, which only came to the fore in psychology some half century after his death, and has yet to penetrate philosophy, but he clearly grasped the two systems framework (the 'grammar') in all of his work from the early 30's on, and one can see clear foreshadowings in his very earliest writings.

Much has been written on Moore and W and On Certainty (OC) recently, after half a century in relative oblivion. See e.g., Annalisa Coliva's "Moore and Wittgenstein"(2010), "Extended Rationality" (2015), and The Varieties of Self-Knowledge'(2016), Brice's 'Exploring Certainty'(2014), Andy Hamilton's 'Routledge Philosophy GuideBook to Wittgenstein and On Certainty', and above all the many recent books and papers of Daniele Moyal-Sharrock (DMS) and Peter Hacker (PH), including Hacker's recent 3 volumes on Human Nature. For an excellent quick look at how various philosophers react to OC and how they go astray see McDougall's 'Critical Notice of Readings of Wittgenstein's On Certainty', free on the net like most papers now. DMS and PH have been the leading scholars of the later W, each writing or editing half a dozen books (many reviewed by me) and many papers in the last decade. However the difficulties of coming to grips with the basics of our higher order psychology, i.e., of how language (approximately the same as the mind, as W showed us) works are evidenced by Coliva, one of the most

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brilliant and prolific contemporary philosophers, who made remarks in a very recent article which show that after years of intensive work on the later W, she really does not quite get that he has solved the most basic problems of the description of human behavior. As DMS makes clear, one cannot even coherently state misgivings about the operations of our basic psychology (W's 'Hinges' which I equate to S1) without lapsing into incoherence. DMS has noted the limitations of both of these workers (limitations shared by all students of behavior) in her recent articles, which (like those of Coliva and Hacker).

As DMS puts it: "...the notes that make up *On Certainty* revolutionize the concept of basic beliefs and dissolve scepticism, making them a corrective, not only to Moore but also to Descartes, Hume, and all of epistemology. *On Certainty* shows Wittgenstein to have solved the problem he set out to solve – the problem that occupied Moore and plagued epistemology – that of the foundation of knowledge.

Wittgenstein's revolutionary insight in *On Certainty* is that what philosophers have traditionally called 'basic beliefs' – those beliefs that all knowledge must ultimately be based on – cannot, on pain of infinite regress, themselves be based on further propositional beliefs. He comes to see that basic beliefs are really animal or unreflective ways of acting which, once formulated (e.g. by philosophers), look like (empirical) propositions. It is this misleading appearance that leads philosophers to believe that at the foundation of thought is yet more thought. Yet though they may often *look like* empirical conclusions, our basic certainties constitute the ungrounded, nonpropositional underpinning of knowledge, not its object. In thus situating the foundation of knowledge in nonreflective certainties that manifest themselves as ways of acting, Wittgenstein has found the place where justification comes to an end, and solved the regress problem of basic beliefs – and, in passing, shown the logical impossibility of hyperbolic scepticism. I believe that this is a groundbreaking achievement for philosophy – worthy of calling *On Certainty* Wittgenstein's 'third masterpiece'." I reached the same general conclusions myself some years ago and stated it in my book reviews.

She continues: "... this is precisely how Wittgenstein describes Moore-type hinge certainties in *On Certainty*: they 'have the form of empirical propositions', but are not empirical propositions. Granted, these certainties are not putative *metaphysical* propositions that appear to describe the *necessary* features of the world, but they are putative *empirical* propositions that appear to describe the *contingent* features of the world. And therein lies some of the novelty of *On Certainty*. *On Certainty* is continuous with all of Wittgenstein's earlier writings – including the *Tractatus* – in that it comes at the end of a long, unbroken attempt to elucidate the grammar of our language-games, to demarcate grammar from language *in use*. Baker and Hacker have superbly elucidated the second Wittgenstein's unmasking of the grammatical nature of metaphysical or super-empirical propositions; what sets *On Certainty* apart is its further perspicuous distinction between some 'empirical' propositions and others ('Our "empirical propositions" do not form a homogenous mass' (OC 213)): some apparently *empirical and contingent* propositions being in fact nothing but expressions of grammatical rules. The importance of this realization is that it leads to the unprecedented insight that basic beliefs – though they look like humdrum empirical and contingent propositions – are in fact ways of acting which, when conceptually elucidated, can be seen to function as rules of grammar: they underlie all thinking (OC 401). So that the hinge certainty 'The earth has existed for many years' underpins all thought and action, but not as a proposition that strikes us immediately as true; rather as a way of acting that underpins what we do (e.g., we research the age of the earth) and what we say (e.g., we speak of the earth in the past tense): Giving grounds, however, justifying the evidence, comes to an end; – but the end is not certain

propositions striking us immediately as true, i.e. it is not a kind of *seeing* on our part; it is our *acting*, which lies at the bottom of the language-game. (OC 204)

The nonpropositional nature of basic beliefs puts a stop to the regress that has plagued epistemology: we no longer need to posit untenable self-justifying propositions at the basis of knowledge. In taking hinges to be true empirical propositions, Peter Hacker fails to acknowledge the ground-breaking insight that our basic certainties are *ways of acting*, and not 'certain propositions striking us as true' (OC 204). If all Wittgenstein were doing in OC was to claim that our basic beliefs are true empirical propositions, why bother? He would be merely repeating what philosophers before him have been saying for centuries, all the while deploring an unsolvable infinite regress. Why not rather appreciate that Wittgenstein has stopped the regress?" ("Beyond Hacker's Wittgenstein"- (2013)).

It is amazing (and a sign of how deep the divide remains between philosophy and psychology) that (as I have noted many times in recent reviews) in a decade of intensive reading I have not seen one person make the obvious connection between W's 'grammar' and the automatic reflexive functions of our brain which constitute System 1, and its extensions into the linguistic functions of System 2. For anyone familiar with the two systems framework for understanding behavior that has dominated various areas of psychology such as decision theory for the last several decades, it should be glaringly obvious that 'basic beliefs' (or as I call them B1) are the inherited automated true-only structure of S1 and that their extension with experience into true or false sentences (or as I call them B2) are what non-philosophers call 'beliefs'. This may strike some as a mere terminological trifle, but I have used the two systems view and its tabulation below as the logical structure of rationality for a decade and regard it as the single biggest advance in understanding higher order behavior, and hence of W or any philosophical or behavioral writing. In my view, the failure to grasp the fundamental importance of the automaticity of our behavior due to S1 and the consequent attribution of all social interaction (e.g., politics) to the superficialities of S2 is responsible for the inexorable collapse of industrial civilization. The almost universal oblivion to basic biology and psychology leads to endless fruitless attempts fix the world's problems via politics, but only a drastic restructuring of society with understanding of the fundamental role of inclusive fitness as manifested via the automaticities of S1 has any chance to save the world. The oblivion to S1 has been called by Searle 'The phenomenological Illusion', by Pinker 'The Blank Slate' and by Tooby and Cosmides 'The Standard Social Science Model'.

OC shows W's unique super-Socratic dialogue (narrator, interlocutor, commentator) in full bloom and better than anywhere else in his works. He realized by the late 20's that the only way to make any progress was to look at how language actually works-otherwise one gets lost in the labyrinth of language from the very first sentences and there is not the slightest hope of finding one's way out. The entire book looks at various uses of the word 'know' which separate themselves out into 'know' as an intuitive 'perceptual' certainty that cannot meaningfully be questioned (my K1) and 'know' as a disposition to act (my K2), which functions the same as think, hope, judge, understand, imagine, remember, believe and many other dispositional words. As I have suggested in my various reviews of W and S, these two uses correspond to the modern two systems of thought framework that is so powerful in understanding behavior (mind, language), and this (and his other work) is the first significant effort to show how our fast, prelinguistic automatic 'mental states' are the unquestionable axiomatic basis ('hinges') for our later-evolved, slow, linguistic, deliberative dispositional psychology. As I have noted many times, neither W, nor anyone else to my knowledge, has ever stated this clearly. Undoubtedly, most who read OC go away with no clear idea of what he has done, which is the normal result of reading any of his work.

On Certainty (OC) was not published until 1969, 18 years after Wittgenstein's death and has only recently begun to draw serious attention. There are few references to it in Searle (W's heir apparent and the most eminent living philosopher) and one sees whole books on W with barely a mention. There are however reasonably good books on it by Stroll, Svensson, McGinn and others and parts of many other books and articles, but the best is that of Daniele Moyal-Sharrock (DMS) whose 2004 volume "Understanding Wittgenstein's On Certainty" is mandatory for every educated person, and perhaps the best starting point for understanding Wittgenstein (W), psychology, philosophy and life. However (in my view) all analysis of W falls short of fully grasping his unique and revolutionary advances by failing to put behavior in its broad evolutionary and contemporary scientific context, which I will attempt here. Some may be disappointed that they don't get a page by page explanation of OC but (as with any other book dealing with behavior-i.e., philosophy, psychology, anthropology, sociology, history, law, politics, religion, literature etc.) we would not get past the first page, as all the issues discussed here arise immediately in any discussion of behavior.

In the course of many years reading extensively in W, other philosophers, and psychology, it has become clear that what he laid out in his final period (and throughout his earlier work in a less clear way) are the foundations of what is now known as evolutionary psychology (EP), or if you prefer, cognitive psychology, cognitive linguistics, intentionality, higher order thought or just animal behavior. Sadly, few realize that his works are a vast and unique textbook of descriptive psychology that is as relevant now as the day it was written. He is almost universally ignored by psychology and other behavioral sciences and humanities, and even those few who have understood him have not realized the extent of his anticipation of the latest work on EP and cognitive illusions (e.g., the two selves of fast and slow thinking—see below). John Searle (S), refers to him infrequently, but his work can be seen as a straightforward extension of W's, though he does not seem to see this. W analysts such as Baker and Hacker (B&H), Read, Harre, Horwich, Stern, Hutto and Moyal-Sharrock do marvelously but stop short of putting him in the center of current psychology, where he certainly belongs. It should also be clear that insofar as they are coherent and correct, all accounts of higher order behavior are describing the same phenomena and ought to translate easily into one another. Thus the recently fashionable themes of "Embodied Mind" and "Radical Enactivism" should flow directly from and into W's work (and they do).

The failure of even the best thinkers to fully grasp W's significance is partly due to the limited attention On Certainty (OC) and his other 3<sup>rd</sup> period works have received until recently, but even more to the inability of many philosophers and others to understand how profoundly our view of philosophy (which I call the descriptive psychology of higher order thought-DPHOT- or more precisely the study of the language used in DPHOT --which Searle calls the logical structure of rationality-LSR), anthropology, sociology, politics, law, morals, ethics, religion, aesthetics, literature and all of animal behavior alters once we embrace the evolutionary framework.

The dead hand of the blank slate view of behavior still rests heavily and is the default of the 'second self' of slow thinking conscious system 2, which (without education) is oblivious to the fact that the groundwork for all behavior lies in the unconscious, fast thinking axiomatic structure of system 1 (Searle's 'Phenomenological Illusion'). Searle summed this up in a very insightful recent article by noting that many logical features of intentionality are beyond the reach of phenomenology because the

creation of meaningfulness (i.e., the COS of S2) out of meaninglessness (i.e., the reflexes of S1) is not consciously experienced. See *Philosophy in a New Century* (PNC) p115-117 and my review of it.

Before remarking on this book, it is essential to grasp the W/S framework so I will first offer some comments on philosophy and its relationship to contemporary psychological research as exemplified in the works of Searle (S), Wittgenstein (W), Baker and Hacker (B&H), Read, Hutto, Daniele Moyal-Sharrock (DMS) et. al. It will help to see my reviews of various books by Searle such as *Philosophy in a New Century* (PNC), and *Making the Social World* (MSW), the classics by W such as TLP, PI, and other books by and about these geniuses, who provide a clear description of higher order behavior not found in psychology books, that I will refer to as the Wittgenstein/Searle (W/S) framework. To say that Searle has carried on W's work is not to imply that it is a direct result of W study, but rather that because there is only ONE human psychology (for the same reason there is only ONE human cardiology), that anyone accurately describing behavior must be enunciating some variant or extension of what W said.

A major theme in all discussion of human behavior is the need to separate the genetically programmed automatism of S1 (which I equate with W's 'hinges') from the less mechanical linguistic dispositional behavior of S2. To rephrase: all study of higher order behavior is an effort to tease apart fast System 1 (S1) and slow System 2 (S2) thinking --e.g., perceptions and other automatism vs. dispositions. Searle's work as a whole provides a stunning description of higher order S2 social behavior including 'we intentionality', while the later W shows how S2 is based on true-only unconscious axioms of S1, which in evolution and in each of our personal histories developed into conscious dispositional propositional thinking (acting) of S2.

Wittgenstein famously remarked that the confusion and barrenness of psychology is not to be explained by calling it a young science and that philosophers are irresistibly tempted to ask and answer questions in the way science does. He noted that this tendency is the real source of metaphysics and leads the philosopher into complete darkness. See BBB p18. Another notable comment was that if we are not concerned with "causes" the activities of the mind lie open before us --see BB p6 (1933). Likewise the 20,000 pages of his nachlass demonstrated his famous dictum that the problem is not to find the solution but to recognize as the solution what appears to be only a preliminary. See his Zettel p312-314. And again he noted 80 years ago that we ought to realize that we can only give *descriptions* of behavior and that these are not hints of *explanations* (BBB p125)

The common ideas (e.g., the subtitle of one of Pinker's books "The Stuff of Thought: language as a window into human nature") that language (mind, speech) is a window on or some sort of translation of our thinking or even (Fodor's LOT, Carruthers' ISA, etc.) that there must be some other "Language of Thought" of which it is a translation, were rejected by W, who tried to show, with hundreds of continually reanalyzed perspicuous examples of language in action, that language is not a picture of but is itself thinking or the mind, and his whole corpus can be regarded as the development of this idea. Many have deconstructed the idea of a 'language of thought' but in my view none better than W in BBB p37--"if we keep in mind the possibility of a picture which, though correct, has no similarity with its object, the interpolation of a shadow between the sentence and reality loses all point. For now the sentence itself can serve as such a shadow. The sentence is just such a picture, which hasn't the slightest

similarity with what it represents.” So language issues direct from the brain and what could count as evidence for an intermediary?

W rejected the idea that the Bottom Up approaches of physiology, psychology and computation could reveal what his Top Down analysis of Language Games (LG’s) did. The difficulties he noted are to understand what is always in front of our eyes and to capture vagueness –i.e., “the greatest difficulty in these investigations is to find a way of representing vagueness” (LWPP1, 347). And so, speech (i.e., oral muscle contractions, the principal way we interact) is not a window into the mind but is the mind itself, which is expressed by acoustic blasts about past, present and future acts (i.e., our speech using the later evolved Language Games (LG’s) of the Second Self--the dispositions such as imagining, knowing, meaning, believing, intending etc.). Some of W’s favorite topics in his later second and his third periods are the interdigitating mechanisms of fast and slow thinking (System 1 and 2), the irrelevance of our subjective ‘mental life’ to the functioning of language, and the impossibility of private language. The bedrock of our behavior is our involuntary, System 1, fast thinking, true only, mental states- our perceptions and memories and involuntary acts, while the evolutionarily later LG’s are voluntary, System 2, slow thinking, testable true or false dispositional (and often counterfactual) imagining, supposing, intending, thinking, knowing, believing etc. He recognized that ‘Nothing is Hidden’ –i.e., our whole psychology and all the answers to all philosophical questions are here in our language (our life) and that the difficulty is not to find the answers but to recognize them as always here in front of us—we just have to stop trying to look deeper (e.g., in LWPP1—“the greatest danger here is wanting to observe oneself”).

W is not legislating the boundaries of science but pointing out the fact that our behavior (mostly speech) is the clearest picture possible of our psychology. FMRI, PET, TCMS, iRNA, computational analogs, AI and all the rest are fascinating and powerful ways to describe and extend our innate axiomatic psychology, but all they can do is provide the physical basis for our behavior, multiply our language games, and extend S2. The true-only axioms of “On Certainty” are W’s (and later Searle’s) “bedrock” or “background”, which we now call evolutionary psychology (EP), and which is traceable to the automated true-only reactions of bacteria, which evolved and operate by the mechanism of inclusive fitness (IF). See the recent works of Trivers for a popular intro to IF or Bourke’s superb “Principles of Social Evolution” for a pro intro. The recent travesty of evolutionary thought by Nowak and Wilson in no way impacts the fact that IF is the prime mechanism of evolution by natural selection (see my review of ‘The Social Conquest of Earth’ (2012)).

So, as W develops in OC, most of our shared public experience (culture) becomes a true-only extension of our axiomatic EP and cannot be found ‘mistaken’ without threatening our sanity—as he noted a ‘mistake’ in S1 (no test) has profoundly different consequences from one in S2 (testable). A corollary, nicely explained by DMS and elucidated in his own unique manner by Searle, is that the skeptical view of the world and other minds (and a mountain of other nonsense) cannot get a foothold, as “reality” is the result of involuntary ‘fast thinking’ axioms and not testable propositions (as I would put it).

It is clear to me that the innate true-only axioms W is occupied with throughout his work, and especially in OC, are equivalent to the fast thinking or System 1 that is at the center of current research (e.g., see Kahneman--“Thinking Fast and Slow”, but neither he, nor anyone afaik, has any idea W laid out the framework over 50 years ago), which is involuntary and automatic and which corresponds to the mental

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states of perception, emotion and memory, as W notes over and over. One might call these “intracerebral reflexes” (maybe 99% of all our cerebration if measured by energy use in the brain). Our slow or reflective, more or less “conscious” (beware another network of language games!) second self brain activity corresponds to what W characterized as “dispositions” or “inclinations”, which refer to abilities or possible actions, are not mental states, are conscious, deliberate and propositional (true or false), and do not have any definite time of occurrence.

As W notes, disposition words have at least two basic uses. One is a peculiar mostly philosophical use (but graduating into everyday uses) which refers to the true-only sentences resulting from direct perceptions and memory, i.e., our innate axiomatic S1 psychology (‘I know these are my hands’), originally termed Causally Self Referential (CSR) by Searle (but now Causally Self-Reflexive) or reflexive or intransitive in W’s Blue and Brown Books (BBB), and the S2 use, which is their normal use as dispositions, which can be acted out, and which can become true or false (‘I know my way home’)—i.e., they have Conditions of Satisfaction (COS) in the strict sense, and are not CSR (called transitive in BBB). The equation of these terms from modern psychology with those used by W and S (and much else here) is my idea, so don’t expect to find it in the literature (except my reviews on Amazon, ViXra.org, philpapers.org, academia.edu).

Though seldom touched upon by philosophers, the investigation of involuntary fast thinking has revolutionized psychology, economics (e.g., Kahneman’s Nobel prize) and other disciplines under names like “cognitive illusions”, “priming”, “framing”, “heuristics” and “biases”. Of course these too are language games, so there will be more and less useful ways to use these words, and studies and discussions will vary from “pure” System 1 to combinations of 1 and 2 (the norm as W made clear, but of course he did not use this terminology), but presumably not ever of slow S2 dispositional thinking only, since any thought (intentional action) cannot occur without involving much of the intricate S1 network of the “cognitive modules”, “inference engines”, “intracerebral reflexes”, “automatizations”, “cognitive axioms”, “background” or “bedrock” (as W and Searle call our EP) which must use S1 to move muscles (action).

It follows both from W’s 3rd period work and from contemporary psychology, that ‘will’, ‘self’ and ‘consciousness’ (which as Searle notes are presupposed by all discussion of intentionality) are axiomatic true-only elements of S1, composed of perceptions, memories and reflexes., and there is no possibility (intelligibility) of demonstrating (of giving sense to) their falsehood. As W made clear numerous times, they are the basis for judgment and so cannot be judged. The true-only axioms of our psychology are not evidential. As he famously said in OC 94—“but I did not get my picture of the world by satisfying myself of its correctness: nor do I have it because I am satisfied of its correctness.-no: it is the inherited background against which I distinguish between true and false.”

Evolution by inclusive fitness has programmed the unconscious rapid reflexive causal actions of S1, which typically give rise to the conscious slow thinking of S2, which produces reasons for action that often result in activation of body and/or speech muscles by feedback into S1, causing actions. The general mechanism is via both neurotransmission and by changes in neuromodulators in targeted areas of the brain. The overall cognitive illusion (called by Searle ‘The Phenomenological Illusion’, by Pinker



'The Blank Slate' and by Tooby and Cosmides 'The Standard Social Science Model') is that S2 has generated the action consciously for reasons of which we are fully aware and in control of, but anyone familiar with modern biology and psychology can see that this view is not credible.

A sentence expresses a thought (has a meaning), when it has clear Conditions of Satisfaction (COS), i.e., public truth conditions. Hence the comment from W: " When I think in language, there aren't 'meanings' going through my mind in addition to the verbal expressions: the language is itself the vehicle of thought." And, if I think with or without words, the thought is whatever I (honestly) say it is, as there is no other possible criterion (COS). Thus W's aphorisms (p132 in Budd's lovely book on W) –"It is in language that wish and fulfillment meet and like everything metaphysical, the harmony between thought and reality is to be found in the grammar of the language." And one might note here that 'grammar' in W can usually be translated as EP or LSR (DPHOT—see table) and that, in spite of his frequent warnings against theorizing and generalizing)for which he is often incorrectly criticized by Searle), this is about as broad a characterization of higher order descriptive psychology (philosophy) as one can find (as DMS also notes).

W is correct that there is no mental state that constitutes meaning, and Searle notes that there is a general way to characterize the act of meaning—"speaker meaning... is the imposition of conditions of satisfaction on conditions of satisfaction"-- which means to speak or write a well formed sentence expressing COS in a context that can be true or false, and this is an act and not a mental state. i.e., as Searle notes in Philosophy in a New Century p193—"the basic intentional relation between the mind and the world has to do with conditions of satisfaction. And a proposition is anything at all that can stand in an intentional relation to the world, and since those intentional relations always determine conditions of satisfaction, and a proposition is defined as anything sufficient to determine conditions of satisfaction, it turns out that all intentionality is a matter of propositions." --propositions being public events that can be true or false. Hence, the famous comment by W from PI p217—"If God had looked into our minds he would not have been able to see there whom we were speaking of", and his comments that the whole problem of representation is contained in "that's Him" and "what gives the image its interpretation is the path on which it lies," or as S says its COS. Hence W's summation (p140 Budd) –"what it always comes to in the end is that without any further meaning, he calls what happened the wish that that should happen-and- the question whether I know what I wish before my wish is fulfilled cannot arise at all. And the fact that some event stops my wishing does not mean that it fulfills it. Perhaps I should not have been satisfied if my wish had been satisfied. Suppose it were asked -do I know what I long for before I get it? If I have learned to talk, then I do know."

One of W's recurring themes is now referred to as Theory of Mind, or as I prefer, Understanding of Agency (UA). Ian Apperly, who is carefully analyzing UA1 and UA2 (i.e., UA of S1 and S2) in experiments, has recently become aware of the work of Daniel Hutto, who has characterized UA1 as a fantasy (i.e., no 'Theory' nor representation can be involved in UA1--that being reserved for UA2—see my review of his book with Myin). However, like other psychologists, Apperly has no idea W laid the groundwork for this 80 years ago. It is an easily defensible view that the core of the burgeoning literature on cognitive illusions, automatisms and higher order thought is compatible with and straightforwardly deducible

from W. In spite of the fact that most of the above has been known to many for decades (and even  $\frac{3}{4}$  of a century in the case of some of W's teachings), I have never seen anything approaching an adequate discussion in philosophy or other behavioral science texts, and commonly there is barely a mention.

INTENTIONALITY can be viewed as personality or as the Construction of Social Reality (the title of Searle's well known book) and I will give some perspective.

About a million years ago primates evolved the ability to use their throat muscles to make complex series of noises (i.e., speech) that by about 100,000 years ago had evolved to describe present events (perceptions, memory, reflexive actions with basic utterances that can be described as Primary Language Games (PLG's) describing System 1—i.e., the fast unconscious automated System One, true-only mental states with a precise time and location). We gradually developed the further ability to encompass displacements in space and time to describe memories, attitudes and potential events (the past and future and often counterfactual, conditional or fictional preferences, inclinations or dispositions) with the Secondary Language Games (SLG's) of System Two- slow conscious true or false propositional attitudinal thinking, which has no precise time and are abilities and not mental states). Preferences are Intuitions, Tendencies, Automatic Ontological Rules, Behaviors, Abilities, Cognitive Modules, Personality Traits, Templates, Inference Engines, Inclinations, Emotions, Propositional Attitudes, Appraisals, capacities, hypotheses. Emotions are Type 2 Preferences (W RPP2 p148). "I believe", "he loves", "they think" are descriptions of possible public acts typically displaced in spacetime. My first person statements about myself are true-only (excluding lying) while third person statements about others are true or false (see my review of Johnston 'Wittgenstein: Rethinking the Inner').

"Preferences" as a class of intentional states --opposed to perceptions, reflexive acts and memories-- were first clearly described by Wittgenstein (W) in the 1930's and termed "inclinations" or "dispositions". They have commonly been termed "propositional attitudes" since Russell but this is a misleading phrase since believing, intending, knowing, remembering etc., are often not propositions nor attitudes, as has been shown e.g., by W

and by Searle (e.g., *Consciousness and Language* p118). They are intrinsic, observer independent mental representations (as opposed to presentations or representations of System 1 to System 2 – Searle-C+L p53). They are potential acts displaced in time or space while the evolutionarily more primitive System One mental states of perceptions memories and reflexive actions are always here and now. This is one way to characterize System 2 and System 3--the second and third major advances in vertebrate psychology after System 1—the ability to represent events and to think of them as occurring in another place or time (Searle's third faculty of counterfactual imagination supplementing cognition and volition). S1 are potential or unconscious mental states (Searle-- *Phil Issues* 1:45-66(1991)).

Perceptions, memories and reflexive (automatic) actions can be described as S1 or primary LG's ( PLG's --e.g., I see the dog) and there are, in the normal case, no tests possible, so they can be true-only. Dispositions can be described as secondary LG's (SLG's –e.g. I believe I see the dog) and must also be acted out, even for me in my own case (i.e., how do I *know* what I believe, think, feel until I act). Dispositions also become Actions when spoken or written as well as being acted out in other ways, and these ideas are all due to Wittgenstein (mid 1930's) and are not Behaviorism (Hintikka & Hintikka 1981, Searle, Hutto, Read, Hacker etc.,). Wittgenstein can be regarded as the founder of evolutionary psychology, contextualism, enactivism, and the two systems framework, and his work a unique investigation of the functioning of our axiomatic System 1 psychology and its interaction with System 2. Though few have understood it well (and arguably nobody fully to this day) it was further developed by a few -- above all by John Searle, who made a simpler version of the table below in his classic book *Rationality in Action* (2001). It expands on W's survey of the axiomatic structure of evolutionary psychology developed from his very first comments in 1911 and so beautifully laid out in his last work *On Certainty* (OC) (written in 1950-51). OC is the foundation stone of behavior or epistemology and ontology (arguably the same), cognitive linguistics or the logical structure of Higher Order Thought (HOT), and in my view the single most important work in philosophy (descriptive psychology), and thus in the study of behavior. See my article *The Logical Structure of Philosophy, Psychology, Mind and Language as Revealed in Wittgenstein and Searle* (2016) and the recent work of Daniele Moyal-Sharrock.

Perception, Memory, Reflexive actions and Emotion are primitive partly Subcortical Involuntary Mental States, described in PLG's, in which the mind automatically fits the world (is Causally Self Referential--Searle)--the unquestionable, true-only, axiomatic basis of rationality over which no control is possible). Emotions evolved to make a bridge between desires or intentions and actions. Preferences, Desires, and Intentions are descriptions of slow thinking conscious Voluntary Abilities--described in SLG's-- in which the mind tries to fit the world. Behaviorism and all the other confusions of our default descriptive psychology (philosophy) arise because we cannot see S1 working and describe all actions as SLG's (The Phenomenological Illusion or TPI of Searle). W understood this and described it with unequalled clarity with hundreds of examples of language (the mind) in action throughout his works. Reason has access to working memory and so we use consciously apparent but typically incorrect reasons to explain behavior (the Two Selves of current research). Beliefs and other Dispositions are thoughts which try to match the facts of the world (mind to world direction of fit), while Volitions are intentions to act (Prior Intentions—PI, or Intentions In Action-IAA- Searle) plus acts which try to match the world to the thoughts—world to mind direction of fit—cf. Searle e.g., C+L p145, p190).

Now that we have a reasonable start on the Logical Structure of Rationality (the Descriptive Psychology of Higher Order Thought) laid out we can look at the table of Intentionality that results from this work, which I have constructed over the last few years. It is based on a much simpler one from Searle, which in turn owes much to Wittgenstein. I have also incorporated in modified form tables being used by current researchers in the psychology of thinking processes which are evidenced in the last 9 rows. It should prove interesting to compare it with those in Peter Hacker's 3 recent volumes on Human Nature. I offer this table as an heuristic for describing behavior that I find more complete and useful than any other framework I have seen and not as a final or complete analysis, which would have to be three dimensional with hundreds (at least) of arrows going in many directions with many (perhaps all) pathways between S1 and S2 being bidirectional. Also, the very distinction between S1 and S2, cognition and willing, perception and memory, between feeling, knowing, believing and expecting etc. are arbitrary--that is, as W demonstrated, all words are contextually sensitive and most have several utterly different uses (meanings or COS).

In accord with W's work and Searle's terminology, I categorize the representations of S2 as public Conditions of Satisfaction (COS) and in this sense S1 such as perceptions do not have COS. In other writings S says they do but as noted in my other reviews I think it is then essential to refer to COS1 (private presentations) and COS2 (public presentations). To repeat this critical distinction, public Conditions of Satisfaction of S2 are often referred to by Searle and others as COS, Representations, truthmakers or meanings (or COS2 by myself), while the automatic results of S1 are designated as presentations by others ( or COS1 by myself).

Likewise, I have changed his 'Direction of Fit' to 'Cause Originates From' and his 'Direction of Causation' to 'Causes Changes In'. System 1 is involuntary, reflexive or automated "Rules" R1 while Thinking (Cognition) has no gaps and is voluntary or deliberative "Rules" R2 and Willing (Volition) has 3 gaps (see Searle).

Many complex charts have been published by scientists but I find them of minimal utility when thinking about behavior (as opposed to thinking about brain function). Each level of description may be useful in certain contexts but I find that being coarser or finer limits usefulness.

After half a century in oblivion, the nature of consciousness is now the hottest topic in the behavioral sciences and philosophy. Beginning with the pioneering work of Ludwig Wittgenstein in the 1930's (the Blue and Brown Books) and from the 50's to the present by his successors Searle, Moyal-Sharrock, Read, Baker, Hacker, Stern, Horwich, Winch, Finkelstein etc., I have created the following table as an heuristic for furthering this study. The rows show various aspects or ways of studying and the columns show the involuntary processes and voluntary behaviors comprising the two systems (dual processes) of the Logical Structure of Consciousness (LSC), which can also be regarded as the Logical Structure of Rationality (LSR), of behavior (LSB), of personality (LSP), of Mind (LSM), of language (LSL), of reality (LSOR), of Intentionality (LSI) -the classical philosophical term, the Descriptive Psychology of Consciousness (DPC) , the Descriptive Psychology of Thought (DPT) –or better, the Language of the Descriptive Psychology of Thought (LDPT), terms introduced here and in my other very recent writings.

I will make minimal comments here since those wishing further description may consult my articles and reviews of books by Wittgenstein, Searle and others on academia.edu, philpapers.org , vixra.org, researchgate.net, and on Amazon.

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/Word
Cause Originates From****	World	World	World	World	Mind	Mind	Mind	Mind
Causes Changes In*****	None	Mind	Mind	Mind	None	World	World	World
Causally Self Reflexive*****	No	Yes	Yes	Yes	No	Yes	Yes	Yes
True or False (Testable)	Yes	T only	T only	T only	Yes	Yes	Yes	Yes
Public Conditions of Satisfaction	Yes	Yes/No	Yes/No	No	Yes/No	Yes	No	Yes
Describe a Mental State	No	Yes	Yes	Yes	No	No	Yes/No	Yes
Evolutionary Priority	5	4	2,3	1	5	3	2	2
Voluntary Content	Yes	No	No	No	No	Yes	Yes	Yes
Voluntary Initiation	Yes/No	No	Yes	No	Yes/No	Yes	Yes	Yes
Cognitive System *****	2	1	2/1	1	2 / 1	2	1	2
Change Intensity	No	Yes	Yes	Yes	Yes	No	No	No
Precise Duration	No	Yes	Yes	Yes	No	No	Yes	Yes
Time, Place(H+N,T+T) *****	TT	HN	HN	HN	TT	TT	HN	HN
Special Quality	No	Yes	No	Yes	No	No	No	No
Localized in Body	No	No	No	Yes	No	No	No	Yes
Bodily Expressions	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Self Contradictions	No	Yes	No	No	Yes	No	No	No
Needs a Self	Yes	Yes/No	No	No	Yes	No	No	No
Needs Language	Yes	No	No	No	No	No	No	Yes/No

FROM DECISION RESEARCH								
Subliminal Effects	No	Yes/No	Yes	Yes	No	No	No	Yes/No
Associative/Rule Based	RB	A/RB	A	A	A/RB	RB	RB	RB
Context Dependent/Abstract	A	CD/A	CD	CD	CD/A	A	CD/A	CD/A
Serial/Parallel	S	S/P	P	P	S/P	S	S	S
Heuristic/Analytic	A	H/A	H	H	H/A	A	A	A
Needs Working Memory	Yes	No	No	No	No	Yes	Yes	Yes
General Intelligence Dependent	Yes	No	No	No	Yes/No	Yes	Yes	Yes
Cognitive Loading Inhibits	Yes	Yes/No	No	No	Yes	Yes	Yes	Yes
Arousal Facilitates or Inhibits	I	F/I	F	F	I	I	I	I

- \* Aka Inclinations, Capabilities, Preferences, Representations, possible actions etc.
- \*\* Searle's Prior Intentions
- \*\*\* Searle's Intention In Action
- \*\*\*\* Searle's Direction of Fit
- \*\*\*\*\* Searle's Direction of Causation
- \*\*\*\*\* (Mental State instantiates--Causes or Fulfills Itself). Searle formerly called this causally self-referential.
- \*\*\*\*\* Tversky/Kahneman/Frederick/Evans/Stanovich defined cognitive systems.
- \*\*\*\*\* Here and Now or There and Then

One should always keep in mind Wittgenstein's discovery that after we have described the possible uses (meanings, truthmakers, Conditions of Satisfaction) of language in a particular context, we have exhausted its interest, and attempts at explanation (i.e., philosophy) only get us further away from the truth. It is critical to note that this table is only a highly simplified context-free heuristic and each use of a word must be examined in its context. The best examination of context variation is in Peter Hacker's recent 3 volumes on Human Nature, which provide numerous tables and charts that should be compared with this one.

**EXPLANATION OF THE TABLE** System 1 (i.e., emotions, memory, perceptions, reflexes) which parts of the brain *present* to consciousness, are automated and generally happen in less than 500msec, while System 2 is abilities to perform slow deliberative actions that are *represented* in conscious deliberation (S2D-my terminology) requiring over 500msec, but frequently repeated S2 actions can also become automated (S2A-my terminology). There is a gradation of consciousness from coma through the stages of sleep to full awareness. Memory includes short term memory (working memory) of system 2 and long term memory of System 1. For volitions

one would usually say they are successful or not, rather than true or false. S1 is causally self-reflexive since the description of our perceptual experience-the presentation of our senses to consciousness, can only be described in the same words (as the same COS - Searle) as we describe the world, which I prefer to call the percept or COS1 to distinguish it from the representation or public COS2 of S2.

Of course the various rows and columns are logically and psychologically connected. E.g., Emotion, Memory and Perception in the True or False row will be True only, will describe a mental state, belong to cognitive system 1, will not generally be initiated voluntarily, are causally self-reflexive, cause originates in the world and causes changes in the mind, have a precise duration, change in intensity, occur here and now, commonly have a special quality, do not need language, are independent of general intelligence and working memory, are not inhibited by cognitive loading, will not have voluntary content, and will not have public conditions of satisfaction etc.

There will always be ambiguities because the words (concepts, language games) cannot precisely match the actual complex functions of the brain (behavior), that is, there is a combinatorial explosion of contexts (in sentences and in the world), and this is why it's not possible to reduce higher order behavior to a system of laws which would have to state all the possible contexts –hence Wittgenstein's warnings against theories.

About a million years ago primates evolved the ability to use their throat muscles to make complex series of noises (i.e., primitive speech) to describe present events (perceptions, memory, reflexive actions) with some Primary or Primitive Language Games (PLG's). System 1 is comprised of fast, automated, subcortical, nonrepresentational, causally self-referential, intransitive, informationless, true-only mental states with a precise time and location) and over time there evolved in higher cortical centers S2 with the further ability to describe displacements in space and time of events (the past and future and often hypothetical, counterfactual, conditional or fictional preferences, inclinations or dispositions-the Secondary or Sophisticated Language Games (SLG's) of System 2 that are slow, cortical, conscious, information containing, transitive (having public Conditions of Satisfaction-Searle's term for truthmakers or meaning which I divide into COS1 and COS2 for private S1 and public S2), representational (which I again divide into R1 for S1 representations and R2 for S2), true or false propositional thinking, with all S2 functions having no precise time and being abilities and not mental states. Preferences are Intuitions, Tendencies, Automatic Ontological Rules, Behaviors, Abilities, Cognitive Modules, Personality Traits, Templates, Inference Engines, Inclinations, Emotions (described by Searle as agitated desires), Propositional Attitudes (correct only if used to refer to events in the world and not to propositions), Appraisals, Capacities, Hypotheses. Some Emotions are

slowly developing and changing results of S2 dispositions (W Remarks on the Philosophy of Psychology V2 p148) while others are typical S1— automatic and fast to appear and disappear. “I believe”, “he loves”, “they think” are descriptions of possible public acts typically displaced in spacetime. My first person statements about myself are true-only (excluding lying) –i.e. S1, while third person statements about others are true or false –i.e., S2 (see my reviews of Johnston ‘Wittgenstein: Rethinking the Inner’ and of Budd ‘Wittgenstein’s Philosophy of Psychology’).

“Preferences” as a class of intentional states --opposed to perceptions, reflexive acts and memories-- were first clearly described by Wittgenstein (W) in the 1930’s and termed “inclinations” or “dispositions”. They have commonly been termed “propositional attitudes” since Russell but this is a misleading phrase since believing, intending, knowing, remembering etc., are often not propositional nor attitudes, as has been shown e.g., by W and by Searle (e.g., cf Consciousness and Language p118). They are intrinsic, observer independent public representations (as opposed to presentations or representations of System 1 to System 2 – Searle-C+L p53). They are potential acts displaced in time or space, while the evolutionarily more primitive S1 perceptions memories and reflexive actions are always here and now. This is one way to characterize System 2 -the second major advance in vertebrate psychology after System 1—the ability to represent events and to think of them as occurring in another place or time (Searle’s third faculty of counterfactual imagination supplementing cognition and volition). S1 ‘thoughts’ (my T1) are potential or unconscious mental states of S1 --Searle-- Phil Issues 1:45-66(1991).

Perceptions, memories and reflexive (automatic) actions can be described by primary LG’s ( PLG’s -- e.g., I see the dog) and there are, in the normal case, NO TESTS possible so they can be True Only. Dispositions can be described as secondary LG’s ( SLG’s –e.g. I believe I see the dog) and must also be acted out, even for me in my own case (i.e., how do I KNOW what I believe, think, feel until I act or some event occurs—see my reviews of Johnston and Budd. Note well that Dispositions become Actions when spoken or written as well as being acted out in other ways, and these ideas are all due to Wittgenstein (mid 1930’s) and are NOT Behaviorism (Hintikka & Hintikka 1981, Searle, Hacker, Hutto etc.,). Wittgenstein can be regarded as the founder of evolutionary psychology and his work a unique investigation of the functioning of our axiomatic System 1 psychology and its interaction with System 2. After Wittgenstein laid the groundwork for the Descriptive Psychology of Higher Order Thought in the Blue and Brown Books in the early 30’s, it was extended by John Searle, who made a simpler version of this table in his classic book Rationality in Action (2001). It expands on W’s survey of the axiomatic structure of evolutionary psychology developed from his very first comments in 1911 and so beautifully laid out in his last work ‘On Certainty’ (OC) (written in 1950-51). OC is the foundation stone of behavior or epistemology and ontology (arguably the same as are semantics and pragmatics), cognitive linguistics or Higher Order Thought, and in my view (shared e.g., by DMS) the single most important work in philosophy (descriptive psychology) and thus in the study of behavior. Perception, Memory, Reflexive actions and Emotion are primitive partly Subcortical Involuntary Mental States, that can be described in PLG’s, in which the mind automatically fits (presents) the world (is Causally Self Reflexive--Searle)--the unquestionable, true-only, axiomatic basis of rationality over which no control is possible). Preferences, Desires, and Intentions are descriptions of slow thinking conscious Voluntary Abilities—that can be described in SLG’s-- in which the mind tries to fit



(represent) the world. Behaviorism and all the other confusions of our default descriptive psychology (philosophy) arise because we cannot see S1 working and describe all actions as SLG's (The Phenomenological Illusion—TPI—Searle). W understood this and described it with unequalled clarity with hundreds of examples of language (the mind) in action throughout his works. Reason has access to memory and so we use consciously apparent but often incorrect reasons to explain behavior (the Two Selves or Systems or Processes of current research). Beliefs and other Dispositions can be described as thoughts which try to match the facts of the world (mind to world direction of fit), while Volitions are intentions to act (Prior Intentions—PI, or Intentions In Action-IAA-Searle) plus acts which try to match the world to the thoughts—world to mind direction of fit—cf. Searle e.g., C+L p145, 190).

Sometimes there are gaps in reasoning to arrive at belief and other dispositions. Disposition words can be used as nouns which seem to describe mental states ('my thought is...') or as verbs or adjectives to describe abilities (agents as they act or might act -'I think that...') and are often incorrectly called "Propositional Attitudes". Perceptions become Memories and our innate programs (cognitive modules, templates, inference engines of S1) use these to produce Dispositions—(believing, knowing, understanding, thinking, etc.,-actual or potential *public* acts (language, thought, mind) also called Inclinations, Preferences, Capabilities, Representations of S2) and Volition -and there is no language (concept, thought) of *private* mental states for thinking or willing (i.e., no private language, thought or mind). Higher animals can think and will acts and to that extent they have a public psychology.

Perceptions: (X is True): Hear, See, Smell, Pain, Touch, temperature Memories:

Remembering (X was true)

Preferences, Inclinations, Dispositions (X might become True) :

CLASS 1: Propositional (True or False) public acts of Believing, Judging, Thinking, Representing, Understanding, Choosing, Deciding, Preferring, Interpreting, Knowing (including skills and abilities), Attending (Learning), Experiencing, Meaning, Remembering, Intending, Considering, Desiring , Expecting, Wishing , Wanting, Hoping( a special class), Seeing As (Aspects),

CLASS 2: DECOUPLED MODE-(as if, conditional, hypothetical, fictional) - Dreaming , Imagining, Lying, Predicting, Doubting

CLASS 3: EMOTIONS: Loving, Hating, Fearing, Sorrow, Joy, Jealousy, Depression. Their function is to modulate Preferences to increase inclusive fitness (expected maximum utility) by facilitating information processing of perceptions and memories for rapid action. There is some separation between S1 emotions such as rage and fear and S2 such as love, hate, disgust and anger. We can think of them as strongly felt or acted out desires.

DESIRES: ( I want X to be True—I want to change the world to fit my thoughts) : Longing, Hoping, Expecting, Awaiting, Needing, Requiring, obliged to do

**INTENTIONS: (I will make X True) Intending**

**ACTIONS (I am making X True) : Acting, Speaking , Reading, Writing, Calculating, Persuading, Showing, Demonstrating, Convincing, Doing Trying, Attempting, Laughing, Playing, Eating, Drinking, Crying, Asserting (Describing, Teaching, Predicting, Reporting), Promising , Making or Using Maps, Books, Drawings, Computer Programs—these are Public and Voluntary and transfer Information to others so they dominate over the Unconscious, Involuntary and Informationless S1 reflexes in explanations of behavior (The Phenomenological Illusion, The Blank Slate or the SSSM).**

Words express actions having various functions in our life and are not the names of objects nor of a single type of event. **The social interactions of humans are governed by cognitive modules—roughly equivalent to the scripts or schemata of social psychology (groups of neurons organized into inference engines), which, with perceptions and memories, lead to the formation of preferences which lead to intentions and then to actions. Intentionality or intentional psychology can be taken to be all these processes or only preferences leading to actions and in the broader sense is the subject of cognitive psychology or cognitive neurosciences when including neurophysiology, neurochemistry and neurogenetics. Evolutionary psychology can be regarded as the study of all the preceding functions or of the operation of the modules which produce behavior, and is then coextensive in evolution, development and individual action with preferences, intentions and actions. Since the axioms (algorithms or cognitive modules) of our psychology are in our genes, we can enlarge our understanding and increase our power by giving clear descriptions of how they work and can extend them (culture) via biology, psychology, philosophy (descriptive psychology), math, logic, physics, and computer programs, thus making them faster and more efficient. Hajek (2003) gives an analysis of dispositions as conditional probabilities which are algorithmatized by Rott (1999), Spohn etc.**

**Intentionality (cognitive or evolutionary psychology) consists of various aspects of behavior which are innately programmed into cognitive modules which create and require consciousness, will and self, and in normal human adults nearly all except perceptions and some memories are purposive, require public acts (e.g., language), and commit us to relationships in order to increase our inclusive fitness (maximum expected utility or Bayesian utility maximization. Bayesianism is highly questionable due to severe underdetermination-i.e., it can 'explain' anything and hence nothing. This occurs via dominance and reciprocal altruism, often resulting in Desire Independent Reasons for Action (Searle)- which I divide into DIRA1 and DIRA2 for S1 and S2) and imposes Conditions of Satisfaction on Conditions of Satisfaction (Searle)-(i.e., relate thoughts to the world via public acts (muscle movements) producing math, language, art, music, sex, sports etc. The basics of this were figured out by our greatest natural psychologist Ludwig Wittgenstein from the 1930's to 1951 but with clear foreshadowings back to 1911, and with refinements by many, but above all by John Searle beginning in the 1960's. "The general tree of psychological phenomena. I strive not for exactness but for a view of the whole." RPP Vol 1 p895 cf Z p464. Much of intentionality (e.g., our language games) admits of degrees. As W noted, inclinations are sometimes conscious and deliberative. All our templates (functions, concepts, language games) have fuzzy edges in some contexts as they must to be useful.**

**There are at least two types of thinking (i.e., two language games or ways of using the dispositional verb "thinking")—nonrational without awareness and rational with partial awareness (W), now**

described as the fast and slow thinking of S1 and S2. It is useful to regard these as language games and not as mere phenomena (W RPP Vol2 p129). Mental phenomena (our subjective or internal “experiences”) are epiphenomenal, lack criteria, hence lack info even for oneself and thus can play no role in communication, thinking or mind. Thinking like all dispositions lacks any test, is not a mental state (unlike perceptions of S1), and contains no information until it becomes a public act or event such as in speech, writing or other muscular contractions. Our perceptions and memories can have information (meaning-i.e., a public COS) only when they are manifested in public actions, for only then do thinking, feeling etc. have any meaning (consequences) even for ourselves.

Memory and perception are integrated by modules into dispositions which become psychologically effective when they are acted upon—i.e., S1 generates S2. Developing language means manifesting the innate ability of advanced humans to substitute words (fine contractions of oral or manual muscles) for acts (gross contractions of arm and leg muscles). TOM (Theory of Mind ) is much better called UA-Understanding of Agency (my term) and UA1 and UA2 for such functions in S1 and S2 –and can also be called Evolutionary Psychology or Intentionality--the innate genetically programmed production of consciousness, self, and thought which leads to intentions and then to actions by contracting muscles. Thus, “propositional attitude” is an incorrect term for normal intuitive deliberative S2D or automated S2A speech and action. We see that the efforts of cognitive science to understand thinking, emotions etc. by studying neurophysiology is not going to tell us anything more about how the mind (thought, language) works (as opposed to how the *brain* works) than we already know, because “mind” (thought, language) is already in full public view (W). Any ‘phenomena’ that are hidden in neurophysiology, biochemistry , genetics, quantum mechanics, or string theory, are as irrelevant to our social life as the fact that a table is composed of atoms which “obey” (can be described by) the laws of physics and chemistry is to having lunch on it. As W so famously said “Nothing is hidden”. Everything of interest about the mind (thought, language) is open to view if we only examine carefully the workings of language. Language (mind, public speech connected to potential actions) was evolved to facilitate social interaction and thus the gathering of resources, survival and reproduction. Its grammar (i.e., evolutionary psychology, intentionality) functions automatically and is extremely confusing when we try to analyze it.

Words and sentences have multiple uses depending on context. I believe and I eat have profoundly different roles as do I believe and I believed or I believe and he believes. The present tense first person use of inclinational verbs such as “I believe” normally describe my ability to predict my probable acts based on knowledge (i.e., S2) but can also seem (in philosophical contexts) to be descriptive of my mental state and so not based on knowledge or information (W and see my review of the book by Hutto and Myin). In the former S1 sense, it does not describe a truth but makes itself true in the act of saying it --i.e., “I believe it’s raining” makes itself true. That is, disposition verbs used in first person present tense can be causally self-reflexive--they instantiate themselves but then they are not testable (i.e., not T or F, not S2). However past or future tense or third person use--“I believed” or “he believes” or “he will believe’ contain or can be resolved by information that is true or false, as they describe public acts that are or can become verifiable. Likewise, “I believe it’s raining” has no information apart from subsequent actions, even for me, but “I believe it will rain” or

**“he will think it’s raining” are potentially verifiable public acts displaced in spacetime that intend to convey information (or misinformation).**

**Nonreflective or Nonrational (automatic) words spoken without Prior Intent (which I call S2A—i.e., S2D automated by practice) have been called Words as Deeds by W & then by Daniel Moyal-Sharrock in her paper in Philosophical Psychology in 2000). Many so-called Inclinations/Dispositions/Preferences/Tendencies/Capacities/Abilities are Non-Propositional ( NonReflective) Attitudes (far more useful to call them functions or abilities) of System 1 (Tversky and Kahnemann). Prior Intentions are stated by Searle to be Mental States and hence S1, but again I think one must separate PI1 and PI2 since in our normal language our prior intentions are the conscious deliberations of S2. Perceptions, Memories, type 2 Dispositions (e.g., some emotions) and many Type 1 Dispositions are better called Reflexes of S1 and are automatic, nonreflective, NON-Propositional and NON-Attitudinal functioning of the hinges (axioms, algorithms) of our Evolutionary Psychology (Moyal-Sharrock after Wittgenstein).**

Some of the leading exponents of W’s ideas whom I consider essential reading for an understanding of the descriptive psychology of higher order thought are Searle, Coliva, Hutto, DMS, Stern, Horwich, Finkelstein and Read, who have posted most of their work free online at academia.edu. Baker & Hacker are found in their many joint works. The late Baker went overboard with a bizarre psychoanalytic and rather nihilistic interpretation that was ably refuted by Hacker whose “Gordon Baker’s Late Interpretation of Wittgenstein” is free on the net and a must read for any student of behavior.

One can find endless metaphysical reductionist cartoon views of life due to the attempt to explain higher order thought of S2 in terms of the causal framework of S1 which Carruthers (C), Dennett, the Churchlands (3 of the current leaders of scientism, computationalism or materialist reductionism -- hereafter CDC—my acronym for the Centers for (Philosophical) Disease Control) and many others pursue. Scientism has been debunked frequently beginning with W in the BBB in the 30’s when he noted that –“philosophers constantly see the method of science before their eyes and are irresistibly tempted to ask and answer questions in the way science does. This tendency is the real source of metaphysics and leads the philosopher into complete darkness”- and by Searle, Read, Hutto, Hacker and countless others since. The attempt to ‘explain’ (really only to *describe* as W made clear) S2 in causal terms is incoherent and even for S1 it is extremely complex and it is not clear that the highly diverse language games of “causality” can ever be made to apply-even their application in physics and chemistry is variable and often obscure (was it gravity or the abscission layer or hormones or the wind or all of them that made the apple fall and when did the causes start and end)? But as W said-“now if it is not the causal connections which we are concerned with, then the activities of the mind lie open before us”.

However I suggest it is a major mistake to see W as taking either side as usually stated, as his views are much more subtle, more often than not leaving his dialogues unresolved. One might find it useful to start with my reviews of W, S etc., and then study as much of Read, Hutto, Horwich, DMS, Stern, etc. as feasible before digging into the literature of causality and the philosophy of science, and if one finds it uninteresting to do so then W has hit the mark.

In spite of the efforts of W and others, it appears to me that most philosophers have little grasp of the subtlety of language games (e.g., the drastically different uses of 'I know what I mean' and 'I know what time it is'), or of the nature of dispositions, and many (e.g., CDC) still base their ideas on such notions as private language, introspection of 'inner speech' and computationalism, which W laid to rest ¾ of a century ago.

Before I read any book I go to the index and bibliography to see whom they cite. Often the authors most remarkable achievement is the complete or nearly complete omission of all the authors I cite here. W is easily the most widely discussed modern philosopher with about one new book and dozens of articles largely or wholly devoted to him every month. He has his own journal "Philosophical Investigations" and I expect his bibliography exceeds that of the next top 4 or 5 philosophers combined. Searle is perhaps next among moderns (and the only one with many lectures on YouTube—over 100, which unlike almost all other philosophy lectures are a delight to listen to) and Read, etc., are very prominent with dozens of books and hundreds of articles, talks and reviews. But CDC and other metaphysicians ignore them and the thousands who regard their work as critically important. Consequently, the powerful W/S framework (as well by and large of that of modern research in thinking) is totally absent and all the confusions it has cleared away are abundant. If you read my reviews and the works themselves, perhaps your view of most writing in this arena may be quite different. But as W insisted, one has to work the examples through oneself. As often noted, his supersocratic dialogues had a therapeutic intent.

W's definitive arguments against introspection and private language are noted in my other reviews and are extremely well known. Basically they are as simple as pie—we must have a test to differentiate between A and B and tests can only be external and public. He famously illustrated this with the 'Beetle in the Box'. If we all have a box that cannot be opened nor x-rayed etc. and call what is inside a 'beetle' then 'beetle' cannot have any role in language, for every box could contain a different thing or even be empty. So, there is no private language that only I can know and no introspection of 'inner speech'. If X is not publicly demonstrable it cannot be a word in our language. This shoots down Carruther's ISA theory of mind, as well as all the other 'inner sense' theories which he references. I have explained W's dismantling of the notion of introspection and the functioning of dispositional language ('propositional attitudes') above and in my reviews of Budd, Johnston and several of Searle's books. See Stern's "Wittgenstein's PI" (2004) for a nice explanation of Private Language and everything by Read et al for getting to the roots of these issues as few do.

CDC eschew the use of 'I' since it assumes the existence of a 'higher self'. The very act of writing, reading and all language and concepts (language games) of presuppose self, consciousness and will, so such accounts are self-contradictory cartoons of life without any value whatsoever (and zero impact on the daily life of anyone). W/S and others have long noted that the first person point of view is just not intelligibly eliminable or reducible to a 3<sup>rd</sup> person one, but absence of coherence is no problem for the cartoon views of life. Likewise with the description of brain function or behavior as 'computational', 'information processing' etc.,-- well debunked countless times by W/S, Hutto, Read, Hacker and many others.

Writing that attempts to combine science with philosophy, with the meaning of many key terms varying almost at random without awareness, is schizoid and hopeless but there are thousands of science and philosophy books like this. There is the description (not explanation as W made clear) of our behavior and then the experiments of cognitive psychology. Many of these dealing with human behavior combine the conscious thinking of S2 with the unconscious automatisms of S1 (absorb psychology into physiology). We are often told that self, will, and consciousness are illusions, since they think they are showing us the 'real' meaning of these terms, and that the cartoon use is the valid one. That is, S2 is 'unreal' and must be subsumed by the scientific causal descriptions of S1. Hence the reason for the shift from the philosophy of language to the philosophy of mind. See e.g., my review of Carruther's 'The Opacity of Mind'.

If someone says that I can't choose what to have for lunch he is plainly mistaken or if by choice he means something else such as that 'choice' can be *described* as having a 'cause' or that it's not clear how to reduce 'choice' to 'cause' so we must regard it as illusory, then that is trivially true (or incoherent), but irrelevant to how we use language and how we live, which should be regarded as the point from which to begin and end such discussions.

Perhaps one might regard it as relevant that it was W, along with Kant and Nietzsche (great intellects, but neither of them doing much to dissolve the problems of philosophy), who were voted the best of all time by philosophers—not Quine, Dummett, Putnam, Kripke or CDC.

One can see the similarity in all philosophical questions (in the strict sense I consider here, keeping in mind W's comment that not everything with the appearance of a question is one). We want to understand how the brain (or the universe) does it but S2 is not up to it. It's all (or mostly) in the unconscious machinations of S1 via DNA. We don't 'know' but our DNA does, courtesy of the death of countless trillions of organisms over some 3 billion years. We can describe the world easily but often cannot agree on what an 'explanation' should look like. So we struggle with science and ever so slowly describe the mechanisms of mind. Even if we should arrive at "complete" knowledge of the brain, we would still just have a description of what neuronal pattern corresponds to seeing red, but it is not clear what it would mean (COS) to have an "explanation" of why it's red (i.e., why qualia exist). As W said, explanations come to an end somewhere.

For those who grasp the above, the philosophical parts of Carruther's "Opacity of Mind" (a major recent work of the CDC school) are comprised largely of the standard confusions that result from ignoring the work of W, S and hundreds of others. It can be called Scientism or Reductionism and denies the 'reality' of our higher order thought, will, self and consciousness, except as these are given a quite different and wholly incompatible use in science. We have e.g., no reasons for action, only a brain that causes action etc. They create imaginary problems by trying to answer questions that have no clear sense. It should strike us that these views have absolutely no impact on the daily life of those who spend most of their adult life promoting them. This situation is nicely summed up by Rupert Read in his article 'The Hard Problem of Consciousness' — "the hardcore problem becomes more and more remote, the more we de-humanize aspects of the mind, such as information and perception and intentionality. The problem will only really be being faced if we face up to it as a 'problem' that has to do with whole human beings,

embodied in a context (inextricably natural and social) at a given time, etc...then it can become perspicuous to one that there is no problem. Only when one starts, say, to 'theorize' information across human and non-human domains (supposedly using the non-human-the animal {usually thought of as mechanical} or the machine-as one's paradigm, and thus getting things back to front), does it begin to look as if there is a problem...that all the 'isms' (cognitivism, reductionism (to the brain), behaviorism and so on)...push further and further from our reach...*the very conceptualization of the problem* is the very thing which ensures that the 'hard problem' remains insoluble...no good reason has ever been given for us to think that there must be a science of something if it is to be regarded as real. There is no good reason to think that there should be a science of consciousness, or of mind or of society, any more than there need be a science of numbers, or of universes or of capital cities or of games or of constellations or of objects whose names start with the letter 'b'.... We need to *start* with the idea of ourselves as embodied persons acting in a world, *not* with the idea of ourselves as brains with minds 'located' in them or 'attached' to them... There is no way that science can help us bootstrap into an 'external'/'objective' account of what consciousness really is and when it is really present. For it cannot help us when there is a conflict of criteria, when our machines come into conflict with ourselves, into conflict with *us*. *For our machines are only calibrated by our reports in the first place*. There can be no such thing as getting an external point of view... that isn't because... the hard problem is insoluble, ...Rather, we need not admit that a problem *has even been defined*...'transcendental naturalism' ...guarantees... *the keeping alive indefinitely of the problem*. It offers the extraordinary psychological satisfaction of both a humble (yet privileged) 'scientific' statement of limits to the understanding and, the knowingness of being part of a privileged elite, that in stating those limits, can see beyond them. It fails to see what Wittgenstein made clear in the preface to the Tractatus. The limit can... only be drawn in language and what lies on the other side of the limit will be simply nonsense."

Many of W's comments come to mind. He noted 85 years ago that 'mysteries' satisfy a longing for the transcendent, and because we think we can see the 'limits of human understanding', we think we can also see beyond them, and that we should dwell on the fact that we see the limits of language (mind) in the fact that we cannot describe the facts which correspond to a sentence except by repeating the sentence (see p10 etc. in his Culture and Value, written in 1931). I also find it useful to repeat frequently his remark that "superstition is nothing but belief in the causal nexus"--written a century ago in TLP 5.1361.

Also apropos is his famous comment (PI p308) about the origin of the philosophical problems about mental processes (and all philosophical problems). "How does the philosophical problem about mental processes and states and about behaviorism arise? The first step is the one that altogether escapes notice. We talk of processes and states and leave their nature undecided. Sometime perhaps we shall know more about them -- we think. But that is just what commits us to a particular way of looking at the matter. For we have a definite concept of what it means to learn to know a process better. (The decisive movement in the conjuring trick has been made, and it was the very one that we thought quite innocent.) -- And now the analogy which was to make us understand our thoughts falls to pieces. So we have to deny the yet uncomprehended process in the yet unexplored medium. And now it looks as if we had denied mental processes. And naturally we don't want to deny them."

Another seemingly trivial comment by W (PI p271) asked us to imagine a person who forgot what the word 'pain' meant but used it correctly –i.e., he used it as we do! Also relevant is W's comment (TLP 6.52) that when all scientific questions have been answered, nothing is left to question, and that is itself the answer. And central to understanding the scientific (i.e., due to scientism not science) failures of CDC et al is his observation that it is a very common mistake to think that something must *make* us do what we do, which leads to the confusion between cause and reason. "And the mistake which we here and in a thousand similar cases are inclined to make is labeled by the word "to make" as we have used it in the sentence "It is no act of insight which makes us use the rule as we do", because there is an idea that "something must make us" do what we do. And this again joins onto the confusion between cause and reason. *We need have no reason to follow the rule as we do.* The chain of reasons has an end." BBB p143

He has also commented that the chain of causes has an end and that there is no reason in the general case for it to be meaningful to specify a cause.

W saw in his own decades-long struggle the necessity of clarifying 'grammar' oneself by working out 'perspicuous examples' and the futility for many of being told the answers. Hence his famous comments about philosophy as therapy and 'working on oneself'.

Another striking thing about so many philosophy books (and the disguised philosophy throughout the behavioral sciences, physics and math) is that there is often no hint that there are other points of view — that many of the most prominent philosophers regard the scientific view as incoherent. There is also the fact (seldom mentioned) that, provided of course we ignore its incoherence, reduction does not stop at the level of neurophysiology, but can easily be extended (and has often been) to the level of chemistry, physics, quantum mechanics, 'mathematics' or just 'ideas'. What exactly should make neurophysiology privileged? The ancient Greeks generated the idea that nothing exists but ideas and Leibniz famously described the universe as a giant machine. Most recently Stephan Wolfram became a legend in the history of pseudoscience for his description of the universe as a computer automaton in 'A New Kind of Science'. Materialism, mechanism, idealism, reductionism, behaviorism and dualism in their many guises are hardly news and, to a Wittgensteinian, quite dead horses since W dictated the Blue and Brown books in the 30's, or at least since the subsequent publication and extensive commentary on his *nachlass*. **But convincing someone is a hopeless task.** W realized one has to work on oneself—self therapy via long hard working through of 'perspicuous examples' of language (mind) in action.

An (unknowing) expression of how axiomatic psychology rules, and how easy it is to change a word's use without knowing it, was given by physicist Sir James Jeans long ago: "The Universe begins to look more like a great thought than like a great machine." But 'thought', 'machine', 'time', 'space', 'cause', 'event', 'happen', 'occur', 'continue', etc. do not have the same meanings (uses) in science or philosophy as in daily life, or rather they have the old uses mixed in at random with many new ones so there is the appearance of sense without sense. Much of academic discussion of behavior, life and the universe is high comedy (as opposed to the low comedy of most politics, religion and mass media): i.e., "comedy dealing with polite society, characterized by sophisticated, witty dialogue and an intricate plot"-(Dictionary.com). But philosophy is not a waste of time-done rightly, it is the *best* way to spend



time. How else can we understand dispel the chaos in the behavioral sciences or describe our mental life and the higher order thought of System 2--the most intricate, wonderful and mysterious thing there is?

Given this framework it should be easy to understand OC, to follow W's examples describing how our innate psychology uses the reality testing of System 2 to build on the certainties of System 1, so that we as individuals and as societies acquire a world view of irrefutable interlocking experiences that build on the bedrock of our axiomatic genetically programmed reflexive perception and action to the amazing edifice of science and culture. The theory of evolution and the theory of relativity passed long ago from something that could be challenged to certainties that can only be modified, and at the other end of the spectrum, there is no possibility of finding out that there are no such things as Paris or Brontosaurus. The skeptical view is incoherent. We can *say* anything but we cannot *mean* anything.

Thus, with DMS, I regard OC as a description of the foundation stone of human understanding and the most basic document on our psychology. Though written when in his 60's, mentally and physically devastated by cancer, it is as brilliant as his other work and transforms our understanding of philosophy (the descriptive psychology of higher order thought), bringing it at last into the light, after three thousand years in the cave. Metaphysics has been swept away from philosophy and from physics.

"The wrong conception which I want to object to in this connexion is the following, that we can discover something wholly new. That is a mistake. The truth of the matter is that we have already got everything, and that we have got it actually present; we need not wait for anything. We make our moves in the realm of the grammar of our ordinary language, and this grammar is already there. Thus, we have already got everything and need not wait for the future." (said in 1930) Waismann "Ludwig Wittgenstein and the Vienna Circle (1979)p183

Finally, let me suggest that with the perspective I have encouraged here, W is at the center of contemporary philosophy and psychology and is not obscure, difficult or irrelevant, but scintillating, profound and crystal clear and that to miss him is to miss one of the greatest intellectual adventures possible.