

**The Logical Structure of Philosophy, Psychology, Mind and Language as Revealed in the Writings of Ludwig
Wittgenstein and John Searle**

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ABSTRACT

I provide a critical survey of some of the major findings of Wittgenstein and Searle on the logical structure of intentionality(mind, language, behavior), taking as my starting point Wittgenstein's fundamental discovery –that all truly 'philosophical' problems 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. I begin with 'On Certainty' and continue the analysis of recent writings by and about them from the perspective of the two systems of thought, 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." Wittgenstein 'On Certainty' p48

"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 in his last masterpiece 'On Certainty' (OC) looks at perspicuous examples of the varying uses of the words 'know', 'doubt' 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. There are no 'problems' of 'consciousness', 'will', 'space', 'time' etc., but only the need to keep the use (COS) of these words clear. It is truly sad that most philosophers continue to waste their time on the linguistic confusions peculiar to academic philosophy rather than turning their attention to those of the other behavioral disciplines and to physics, biology and mathematics, where it is desperately needed.

What has W really achieved? Here is how a leading Wittgenstein scholar summarized his work: "Wittgenstein resolved many of the deep problems that have dogged our subject for centuries, sometimes indeed for more than two millennia, problems about the nature of linguistic representation, about the relationship between thought and language, about solipsism and idealism, self-knowledge and knowledge of other minds, and about the nature of

necessary truth and of mathematical propositions. He ploughed up the soil of European philosophy of logic and language. He gave us a novel and immensely fruitful array of insights into philosophy of psychology. He attempted to overturn centuries of reflection on the nature of mathematics and mathematical truth. He undermined foundationalist epistemology. And he bequeathed us a vision of philosophy as a contribution not to human knowledge, but to human understanding – understanding of the forms of our thought and of the conceptual confusions into which we are liable to fall.”—Peter Hacker-- 'Gordon Baker's late interpretation of Wittgenstein'

To this I would add that W was the first to clearly and extensively describe the two systems of thought--fast automatic prelinguistic S1 and the slow reflective linguistic dispositional S2. He explained how behavior only is possible with a vast inherited background that is the axiomatic basis for judging and cannot be doubted or judged, so will (choice), consciousness, self, time and space are innate true-only axioms. He noted in thousands of pages and hundreds of examples how our inner mental experiences are not describable in language, this being possible only for behavior with a public language (the impossibility of private language). He predicted the utility of paraconsistent logic which only emerged much later. Incidentally he patented helicopter designs which anticipated by three decades the use of blade-tip jets to drive the rotors, and which had the seeds of the centrifugal-flow gas turbine engine, designed a heart-beat monitor, designed and supervised the building of a modernist house, and sketched a proof of Euler's Theorem, subsequently completed by others. He laid out the psychological foundations of mathematics, logic, incompleteness, and infinity.

And Paul Horwich gives a beautiful summary of where an understanding of Wittgenstein leaves us.

“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 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.”

He can be viewed as the first evolutionary psychologist, since he constantly explained the necessity of the innate background and demonstrated how it generates behavior. Though nobody seems aware of it, he described the psychology behind what later became the Wason test--a fundamental measure used in Evolutionary Psychology (EP) decades later. He noted the indeterminate or underdetermined nature of language and the game-like nature of social interaction. He described and refuted the notions of the mind as machine and the computational theory of mind, long before practical computers or the famous writings of Searle. He invented truth tables for use in logic and philosophy. He decisively laid to rest skepticism and metaphysics. He showed that, far from being inscrutable, the activities of the mind lie open before us, a lesson few have learned since.

When thinking about Wittgenstein, I often recall the comment attributed to Cambridge Philosophy professor C.D. Broad (who did not understand nor like him). “Not offering the chair of philosophy to Wittgenstein would be like not offering the chair of physics to Einstein!” I think of him as the Einstein of intuitive psychology. Though born ten years later, he was likewise hatching ideas about the nature of reality at nearly the same time and in the same part of the world, and, like Einstein, nearly died in WW1. Now suppose Einstein was a suicidal homosexual recluse with a difficult personality who published only one early version of his ideas that were confused and often mistaken, but became world famous; completely changed his ideas but for the next 30 years published nothing more, and knowledge of his new work, in mostly garbled form, diffused slowly from occasional lectures and students notes; that he died in 1951 leaving behind over 20,000 pages of mostly handwritten scribblings in German, composed of sentences or short paragraphs with, often, no clear relationship to sentences before or after; that these were cut and pasted from other notebooks written years earlier with notes in the margins, underlinings and crossed out words, so that many sentences have multiple variants; that his literary executives cut this indigestible mass into pieces, leaving out what they wished and struggling with the monstrous task of capturing the correct meaning of sentences which were conveying utterly novel views of how the universe works and that they then published this material with agonizing slowness (not finished after half a century) with prefaces that contained no real explanation of what it was about; that he became as much notorious as famous due to many statements that all previous physics was a mistake and

even nonsense, and that virtually nobody understood his work, in spite of hundreds of books and tens of thousands of papers discussing it; that many physicists knew only his early work in which he had made a definitive summation of Newtonian physics stated in such extremely abstract and condensed form that it was difficult to decide what was being said; that he was then virtually forgotten and that most books and articles on the nature of the world and the diverse topics of modern physics had only passing and usually erroneous references to him, and that many omitted him entirely; that to this day, over half a century after his death, there were only a handful of people who really grasped the monumental consequences of what he had done. This, I claim, is precisely the situation with Wittgenstein.

Had W lived into his 80's he would have been able to directly influence Searle (another modern genius of descriptive psychology), Symons, and countless other students of behavior. If his brilliant friend Frank Ramsey had not died in his youth, a highly fruitful collaboration would almost certainly have ensued. If his student and colleague Alan Turing had become his lover, one of the most amazing collaborations of all time would likely have evolved. In any one case the intellectual landscape of the 20th century would have been different and if all 3 had occurred it would almost certainly have been very different. Instead he lived in relative intellectual isolation, few knew him well or had an inkling of his ideas while he lived, and only a handful have any real grasp of his work even today. He could have shined as an engineer, a mathematician, a psychologist, a physiologist (he did wartime research in it), a musician (he played instruments and had a renowned talent for whistling), an architect (the house he designed and constructed for his sister still stands), or an entrepreneur (he inherited one of the largest fortunes in the world but gave it all away). It is a miracle he survived the trenches and prison camps and repeated volunteering for the most dangerous duty (while writing the Tractatus) in WW1, many years of suicidal depressions (3 brothers succumbed to them), avoided being trapped in Austria and executed by the Nazis (he was partly Jewish and probably only the Nazi's desire to lay hands on their money saved the family), and that he was not persecuted for his homosexuality and driven to suicide like his friend Turing. He realized nobody understood what he was doing and might never (not surprising as he was half a century –or a whole century depending on your point of view-ahead of psychology and philosophy, which only recently have started accepting that our brain is an evolved organ like our heart.)

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), Hacker (H) et al. It will help to see my reviews of TLP, PI, OC by W, and PNC (Philosophy in a New Century), Making the Social World (MSW), Seeing Things As They Are (STATA), Searle's Philosophy and Chinese Philosophy (SPCP), John R Searle – Thinking About the Real World (TARW), 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 WS framework. I begin with some penetrating quotes from W and S.

"The confusion and barrenness of psychology is not to be explained by calling it a "young science"; its state is not comparable with that of physics, for instance, in its beginnings. (Rather with that of certain branches of mathematics. Set theory.) For in psychology there are experimental methods and conceptual confusion. (As in the other case, conceptual confusion and methods of proof). The existence of the experimental method makes us think we have the means of solving the problems that trouble us; though problem and method pass one another by." Wittgenstein (PI p.232)

"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." (BBB p18).

"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." Wittgenstein OC 94

"The aim of philosophy is to erect a wall at the point where language stops anyway." Wittgenstein Philosophical Occasions p187

"The limit of language is shown by its being impossible to describe a fact which corresponds to (is the translation of) a

sentence without simply repeating the sentence ..." Wittgenstein CV p10

"Many words then in this sense then don't have a strict meaning. But this is not a defect. To think it is would be like saying that the light of my reading lamp is no real light at all because it has no sharp boundary." BBB p27

"Every sign is capable of interpretation but the meaning mustn't be capable of interpretation. It is the last interpretation" BBB p34

"There is a kind of general disease of thinking which always looks for (and finds) what would be called a mental state from which all our acts spring, as from a reservoir." BBB p143

"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

"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." BBBp37

"Thus we may say of some philosophizing mathematicians that they are obviously not aware of the many different usages of the word "proof"; and that they are not clear about the differences between the uses of the word "kind", when they talk of kinds of numbers, kinds of proof, as though the word "kind" here meant the same thing as in the context "kinds of apples." Or, we may say, they are not aware of the different meanings of the word "discovery" when in one case we talk of the discovery of the construction of the pentagon and in the other case of the discovery of the South Pole." BBB p29

"Some of the most important logical features of intentionality are beyond the reach of phenomenology because they have no immediate phenomenological reality... Because the creation of meaningfulness out of meaninglessness is not consciously experienced...it does not exist...This is... the phenomenological illusion." Searle PNC p115-117

"...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." Searle PNC p193

"The intentional state represents its conditions of satisfaction...people erroneously suppose that every mental representation must be consciously thought...but the notion of a representation as I am using it is a functional and not an ontological notion. Anything that has conditions of satisfaction, that can succeed or fail in a way that is characteristic of intentionality, is by definition a representation of its conditions of satisfaction...we can analyze the structure of the intentionality of social phenomena by analyzing their conditions of satisfaction." Searle MSW p28-32

"Superstition is nothing but belief in the causal nexus." TLP 5.1361

"Now if it is not the causal connections which we are concerned with, then the activities of the mind lie open before us." BBB p6

"We feel that even when all possible scientific questions have been answered, the problems of life remain completely untouched. Of course, there are then no questions left, and this itself is the answer."

TLP 6.52

"Nonsense, Nonsense, because you are making assumptions instead of simply describing. If your head is haunted by explanations here, you are neglecting to remind yourself of the most important facts." Z 220

"Philosophy simply puts everything before us and neither explains nor deduces anything...One might give the name

'philosophy' to what is possible before all new discoveries and inventions." PI 126

"The more narrowly we examine actual language, the sharper becomes the conflict between it and our requirement. (For the crystalline purity of logic was, of course, not a result of investigation: it was a requirement.)"PI 107

"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

"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

"Our method is purely descriptive, the descriptions we give are not hints of explanations." BBB p125

These quotes are not chosen at random but (along with the others in my reviews) are an outline of behavior (human nature) from two of our greatest descriptive psychologists. In considering these matters we must keep in mind that philosophy (in the strict sense I consider here) is the descriptive psychology of higher order thought (HOT), which is another of the obvious facts that are totally overlooked -i.e., I have never seen it clearly stated anywhere. In addition to failing to make it clear that what they are doing is descriptive psychology, philosophers rarely specify exactly what it is that they expect to contribute to this topic that other students of behavior (i.e., scientists) do not, so after noting W's above remark on science envy, I will quote again from Hacker who gives a good start on it.

"Traditional epistemologists want to know whether knowledge is true belief and a further condition ..., or whether knowledge does not even imply belief ... We want to know when knowledge does and when it does not require justification. We need to be clear what is ascribed to a person when it is said that he knows something. Is it a distinctive mental state, an achievement, a performance, a disposition or an ability? Could knowing or believing that p be identical with a state of the brain? Why can one say 'he believes that p, but it is not the case that p', whereas one cannot say 'I believe that p, but it is not the case that p'? Why are there ways, methods and means of achieving, attaining or receiving knowledge, but not belief (as opposed to faith)? Why can one know, but not believe who, what, which, when, whether and how? Why can one believe, but not know, wholeheartedly, passionately, hesitantly, foolishly, thoughtlessly, fanatically, dogmatically or reasonably? Why can one know, but not believe, something perfectly well, thoroughly or in detail? And so on - through many hundreds of similar questions pertaining not only to knowledge and belief, but also to doubt, certainty, remembering, forgetting, observing, noticing, recognizing, attending, being aware of, being conscious of, not to mention the numerous verbs of perception and their cognates. What needs to be clarified if these questions are to be answered is the web of our epistemic concepts, the ways in which the various concepts hang together, the various forms of their compatibilities and incompatibilities, their point and purpose, their presuppositions and different forms of context dependency. To this venerable exercise in connective analysis, scientific knowledge, psychology, neuroscience and self-styled cognitive science can contribute nothing whatsoever." (Passing by the naturalistic turn: on Quine's cul-de-sac- p15-2005).

On his death in 1951 W left behind a scattered collection of some 20,000 pages. Apart from the Tractatus, they were unpublished and largely unknown, although some were widely circulated and read (as were notes taken in his classes), leading to extensive but largely unacknowledged influences. Some works are known to have been lost and many others W had destroyed. Most of this Nachlass was microfilmed in 1968 by Cornell University and copies were bought by a very few libraries. Budd, like most W commentators of the period, does not reference the microfilm. Although much of the Nachlass is repetitive and appears in some form in his subsequently published works (which are referenced by Budd), many variant texts are of great interest and there is substantial material that has never been translated from the original German nor published in book form. Even now (2016) we are awaiting a book of unpublished writings to be called 'Dictating Philosophy' and a new edition of the Brown Book, left with his lover

Francis Skinner. In 1998 the Bergen CD of the complete Nachlass appeared -- Wittgenstein's Nachlass: Text and Facsimile Version: The Bergen Electronic Edition \$2500 ISBN 10: 0192686917. It is available through interlibrary loan and apparently free on the net as well. Like the other CDs of W's work, it is available from Intelex (www.nlx.com). It is indexed and searchable and the prime W resource. However, my extensive readings of the W literature show that very few people have bothered to consult it and thus their works are lacking a critical element. One can see Victor Rödlich's papers on W's remarks on Gödel for one notable exception. One major work dating from W's middle period (1933) that was published as a book in 2000 is the famous Big Typescript. Budd's 'Wittgenstein's Philosophy of Psychology' (1991) is one of the better treatments of W (see my review) but since he finished this book in 1989, neither the Big Typescript nor the Bergen CD was available to him and he neglected the Cornell microfilm. Nevertheless by far the most important works date from W's 3rd period (ca. 1935 to 1951) and these were all used by Budd.

In addition, there are huge problems with translation of his early 20th century Viennese German into modern English. One must be a master of English, German, and W in order to do this and very few are up to it. All of his works suffer from clear translation errors and there are more subtle questions where one has to understand the whole thrust of his later philosophy in order to translate. Since, in my view, nobody except Daniele Moyal-Sharrock (DMS) has grasped the full import of his later works, one can see why W has yet to be fully appreciated. Even the more or less well known critical difference between understanding 'Satz' as 'sentence' (i.e., an S1 utterance) vs 'proposition' (i.e., an S2 utterance) in various contexts has usually escaped notice.

Few notice (Budd p29-32, Stern and DMS in a recent article are rare exceptions) that W presciently (decades before chaos and complexity science came into being) suggested that some mental phenomena may originate in chaotic processes in the brain--that e.g., there is not anything corresponding to a memory trace. He also suggested several times that the causal chain has an end and this could mean both that it is just not possible (regardless of the state of science) to trace it any further and that the concept of 'cause' ceases to be applicable beyond a certain point (p34). Subsequently, many have made similar suggestions without any idea that W anticipated them by decades (in fact over a century now in a few instances).

With DMS I regard W's last book 'On Certainty' (OC) as the foundation stone of philosophy and psychology. It is 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. He seems to have been principally motivated by the realization 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), The Varieties of Self-Knowledge' (2016), Brice's 'Exploring Certainty' (2014) and Andy Hamilton's 'Routledge Philosophy Guide Book to Wittgenstein and On Certainty' (which I will review soon) and the many books and papers of Daniele Moyal-Sharrock (DMS) and Peter Hacker (PH), including Hacker's recent 3 volumes on Human Nature. 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 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 does not seem to 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 with 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) are freely available on the net.

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 non-propositional 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 deplored 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 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 can be seen as 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 triologue (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 (along with Hacker, W's heir apparent and the most famous living philosopher) and one sees whole books on W with barely a mention. There are however reasonably good books on it by Stroll, Svensson, Coliva, 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. I will not give a page by page explanation since (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 few pages, as all the issues discussed here arise immediately in any discussion of behavior. The table below summarizing the Logical Structure of Rationality (Descriptive Psychology of Higher Order Thought) provides a framework for this and all 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 mostly 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 most to fully grasp W's significance is partly due to the limited attention On Certainty (OC) and his other

3rd period works have received until recently, but even more to the inability of many philosophers and others to understand how profoundly our view of behavior alters once we embrace the evolutionary framework. I call the framework 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), which grounds anthropology, sociology, politics, law, morals, ethics, religion, aesthetics, literature and history.

The "Theory" of Evolution ceased to be a theory for any normal, rational, intelligent person before the end of the 19th century and for Darwin at least half a century earlier. One cannot help but incorporate T. rex and all that is relevant to it into our true-only axiomatic background via the inexorable workings of EP. Once one gets the logical (psychological) necessity of this it is truly stupefying that even the brightest and the best seem not to grasp this most basic fact of human life (with a tip of the hat to Kant, Searle and a few others) which was laid out in great detail in "On Certainty". Incidentally, the equation of logic and our axiomatic psychology is essential to understanding W and human nature (as Daniele Moyal-Sharrock (DMS), but afaik nobody else, points out).

So, 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. Football or Britney Spears cannot just vanish from my or our memory and vocabulary as these concepts, ideas, events, developed out of and are tied to countless others in the true-only network that begins with birth and extends in all directions to encompass much of our awareness and memory. 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 including the Blank Slate) cannot really get a foothold, as "reality" is the result of involuntary fast thinking axioms and not testable true or false propositions.

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.

It is essential to grasp the W/S (Wittgenstein/Searle) 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. To grasp my simple two systems terminology and perspective, it will help to see my reviews of W/S and other books about these geniuses, who provide a clear description of higher order behavior not found in psychology books. To say that Searle has extended W's work is not necessarily to imply that it is a direct result of W study (and he is clearly not a Wittgensteinian), 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.

However, S seldom mentions W and even then often in a critical way but in my view his criticisms (like everyone's) nearly always miss the mark and he makes many dubious assertions for which he is often criticized. In present context I find the recent criticisms of DMS, Coliva and Hacker most relevant. Nevertheless, he is the prime candidate for the best since W and I recommend downloading the over 100 lectures he has on the net. Unlike nearly all other philosophy lectures they are quite entertaining and informative and I have heard them all at least twice.

A major theme in all discussion of human behavior is the need to separate the genetically programmed automatisms 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 automatisms 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). See the full quotes at other places in this article.

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)).

As W develops in OC, most of our shared public experience (culture) becomes a true-only extension (i.e., S2 Hinges or S2H) of our axiomatic EP (i.e., S1 Hinges or S1H) 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,

nice 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 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 articles on Amazon, viXra.org, philpapers.org, researchgate.net, 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”, “automatisms”, “cognitive axioms”, “background” or “bedrock” (as W and Searle call our EP) which must also 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 p94—“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.”

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 –contra the perverse use of the word for the true-only axioms of S by Searle, Coliva and others. 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 called 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 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 ¼ of a century in the case of some of W's teachings), I have rarely seen anything approaching an adequate discussion in philosophy or other behavioral science texts, and commonly there is barely a mention.

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) to 1951, and from the 50's to the present by his successors Searle, Moyal-Sharrock, Read, 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-Searle), 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.

The ideas for this table originated in the work by Wittgenstein, a much simpler table by Searle, and correlates with extensive tables and graphs in the three recent books on Human Nature by P.M.S Hacker. The last 9 rows come principally from decision research by Johnathan St. B.T. Evans and colleagues as revised by myself.

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)

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

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).

* Aka Inclinations, Capabilities, Preferences, Representations, possible actions etc.

** Searle's PriorIntentions

*** 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

It is of interest to compare this with the various tables and charts in Peter Hacker's recent 3 volumes on Human Nature. 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. He showed us that there is only one philosophical problem—the use of sentences (language games) in an inappropriate context, and hence only one solution— showing the correct context.

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 in the infinite variations of 'brain states' ('mental states or the pattern of activations of billions of neurons that can correspond to 'seeing a red apple') and this is one reason 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. And what counts as 'reducing' and as a 'law' and a 'system' (see e.g., Nancy Cartwright). This is a special case of the irreducibility of higher level descriptions to lower level ones that has been explained many times by Searle, DMS, Hacker, W and others.

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-reflexive, 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 it has often been noted that this is an incorrect or 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). Preferences are intrinsic, observer independent public representations (as opposed to presentations or representations of System 1 to System 2 – Searle-Consciousness and Language 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 (state public COS for) 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-i.e., the use of "thinking" to refer to automatic brain processes of System One) 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- i.e., axiomatic as I prefer or animal reflexes as W and DMS describe. 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 the well known books on W by Johnston and Budd. Note 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, 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 the conscious deliberate actions of S2(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-IA-Searle) plus acts which try to match the world to the thoughts—world to mind direction of fit—cf. Searle e.g., Consciousness and Language 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 such as 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.

DESIRSES: (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 (TPI), The Blank Slate (BS)or the Standard Social Science Model (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 algorithmized by R & L (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). However, 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., relates 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—i.e., Understanding is a Disposition like Thinking and Knowing. Thus, “propositional attitude” is an incorrect term for normal intuitive deliberative S2D (i.e., the slow deliberative functioning of System 2) or automated S2A (i.e., the conversion of frequently practiced System 2 functions of speech and action into automatic fast functions). 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. This has been explained frequently by Hacker, DMS and many others.

As W noted with countless carefully stated examples, 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 inclination 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 Daniele 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 Kahneman). 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 Coliva, Hutto, DMS, Stern, Horwich, Finkelstein and Read, who, like many scholars now, have posted most of their work (often in preprint form) free online at [academia.edu](https://www.academia.edu), philpapers.org and other sites and of course the diligent can find everything free online. Baker & Hacker are found in their many joint works and on his personal page. 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 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 (as has been noted many times)—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 trialogues unresolved. One might find it useful to start with my reviews of W, S etc., and then study as much of Read, Hutto, Horwich, Coliva, Hacker, Glock, 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, Vimeo, University sites etc.—over 100, which, unlike almost all other philosophy lectures, are a delight to listen to) and Hutto, Coliva, DMS, Hacker ,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 super-Socratic 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 Philosophical Investigations "(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'. But, the very act of writing, reading and all language and concepts (language games) 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 3rd 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 recent 'The Opacity of Mind'. Even Searle is a frequent offender here as noted by Hacker, Bennet and Hacker, DMS, Coliva etc.

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 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 Brontosaurs. 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.

“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” --Horwitz ‘Wittgenstein’s Metaphilosophy’.

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.

An excellent recent work that displays many of the philosophical confusions in a book putatively about science and mathematics is Yanofsky's 'The Outer Limits of Reason: What Science, Mathematics and Logic Cannot Tell Us'(2013).

W noted that when we reach the end of scientific commentary, the problem becomes a *philosophical* one-i.e., one of how language can be used intelligibly. Yanofsky, like virtually all scientists and most philosophers, does not get that there are two distinct kinds of "questions" or "assertions"(i.e., Language Games or LG's) here. There are those that are matters of fact about how the world is—that is, they are publicly observable propositional (True or False) states of affairs having clear meanings (Conditions of Satisfaction --COS) in Searle's terminology—i.e., *scientific* statements, and then there are those that are issues about how language can coherently be used to describe these states of affairs, and these can be answered by any sane, intelligent, literate person with little or no resort to the facts of science. Another poorly understood but critical fact is that, although the thinking, representing, inferring, understanding, intuiting etc. (i.e., the dispositional psychology) of a true or false statement is a function of the higher order cognition of our slow, conscious System 2 (S2), the decision as to whether "particles" are entangled, the star shows a red shift, a theorem has been proven (i.e., the part that involves seeing that the symbols are used correctly in each line of the proof), is always made by the fast, automatic, unconscious System 1 (S1) via seeing, hearing, touching etc. in which there is no information processing, no representation (i.e., no COS) and no decisions in the sense in which these happen in S2 (which receives its inputs from S1). This two systems approach is now the standard way to view reasoning or rationality and is a crucial heuristic in the description of behavior, of which science, math and philosophy are special cases. There is a huge and rapidly growing literature on reasoning that is indispensable to the study of behavior or science. A recent book that digs into the details of how we actually reason (i.e., use language to carry out actions—see W, DMS, Hacker, S etc.) is 'Human Reasoning and Cognitive Science' by Stenning and Van Lambalgen (2008), which, in spite of its limitations (e.g., limited understanding of W/S and the broad structure of intentional psychology), is (as of 2016) the best single source I know.

W wrote a great deal on the philosophy of mathematics since it clearly illustrated many of the types of confusions generated by 'scientific' language games, and there have been countless commentaries, many quite poor. I will comment on some of the best recent work as it is brought up by Yanofsky.

Francisco Berto has made some penetrating comments recently. He notes that W denied the coherence of metamathematics-i.e., the use by Godel of a metatheorem to prove his theorem, likely accounting for his "notorious" interpretation of Godel's theorem as a paradox, and if we accept his argument, I think we are forced to deny the intelligibility of metalanguages, metatheories and meta anything else. How can it be that such concepts (words, language games) as metamathematics and incompleteness, accepted by millions (and even claimed by no less than Penrose, Hawking, Dyson et al to reveal fundamental truths about our mind or the universe) are just simple misunderstandings about how language works? Isn't the proof in this pudding that, like so many "revelatory" philosophical notions (e.g., mind and will as illusions —Dennett, Carruthers, the Churchlands etc.), they have no practical impact whatsoever?

Berto sums it up nicely: "Within this framework, it is not possible that the very same sentence...turns out to be expressible, but undecidable, in a formal system... and demonstrably true (under the aforementioned consistency hypothesis) in a different system (the meta- system). If, as Wittgenstein maintained, the proof establishes the very meaning of the proved sentence, then it is not possible for the *same* sentence (that is, for a sentence with the same meaning) to be undecidable in a formal system, but decided in a different system (the meta-system)... Wittgenstein had to reject both the idea that a formal system can be syntactically incomplete, and the Platonic consequence that no formal system proving only arithmetical truths can prove all arithmetical truths. If proofs establish the meaning of arithmetical sentences, then there cannot be incomplete systems, just as there cannot be incomplete meanings." And further "Inconsistent arithmetics, i.e., nonclassical arithmetics based on a paraconsistent logic, are nowadays a reality. What is more important, the theoretical features of such theories match precisely with some of the aforementioned Wittgensteinian intuitions...Their inconsistency allows them also to escape from Godel's First Theorem, and from Church's undecidability result: they are, that is, demonstrably complete and decidable. They

therefore fulfil precisely Wittgenstein's request, according to which there cannot be mathematical problems that can be meaningfully formulated within the system, but which the rules of the system cannot decide. Hence, the decidability of paraconsistent arithmetics harmonizes with an opinion Wittgenstein maintained throughout his philosophical career."

W also demonstrated the fatal error in regarding mathematics or language or our behavior in general as a unitary coherent logical 'system,' rather than as a motley of pieces assembled by the random processes of natural selection. "Godel shows us an unclarity in the concept of 'mathematics', which is indicated by the fact that mathematics is taken to be a *system*" and we can say (contra nearly everyone) that is all that Godel and Gregory Chaitin show. W commented many times that 'truth' in math means axioms or the theorems derived from axioms, and 'false' means that one made a mistake in using the *definitions*, and this is utterly different from empirical matters where one applies a *test*. W often noted that to be acceptable as mathematics in the usual sense, it must be useable in other proofs and it must have real world applications, but neither is the case with Godel's Incompleteness. Since it *cannot* be proved in a consistent system (here Peano Arithmetic but a much wider arena for Chaitin), it cannot be used in proofs and, unlike all the 'rest' of PA it cannot be used in the real world either. As Victor Rodych notes "...Wittgenstein holds that a formal calculus is only a *mathematical* calculus (i.e., a mathematical language-game) if it has an extra-systemic application in a system of contingent propositions (e.g., in ordinary counting and measuring or in physics)..." Another way to say this is that one needs a *warrant* to apply our normal use of words like 'proof', 'proposition', 'true', 'incomplete', 'number', and 'mathematics' to a result in the tangle of games created with 'numbers' and 'plus' and 'minus' signs etc., and with 'Incompleteness' this warrant is lacking. Rodych sums it up admirably. "On Wittgenstein's account, there is no such thing as an incomplete *mathematical* calculus because 'in mathematics, *everything* is algorithm [and syntax] and *nothing* is meaning [semantics]..."

W has much the same to say of Cantor's diagonalization and set theory. "Consideration of the diagonal procedure shews you that the *concept* of 'real number' has much less analogy with the concept 'cardinal number' than we, being misled by certain analogies, are inclined to believe" and many other comments (see Rodych and Floyd).

One of the major omissions from all such books is the amazing work of polymath physicist and decision theorist David Wolpert, who proved some stunning impossibility or incompleteness theorems (1992 to 2008-see arxiv.org) on the limits to inference (computation) that are so general they are independent of the device doing the computation, and even independent of the laws of physics, so they apply across computers, physics, and human behavior, which he summarized thusly: "One cannot build a physical computer that can be assured of correctly processing information faster than the universe does. The results also mean that there cannot exist an infallible, general-purpose observation apparatus, and that there cannot be an infallible, general-purpose control apparatus. These results do not rely on systems that are infinite, and/or non-classical, and/or obey chaotic dynamics. They also hold even if one uses an infinitely fast, infinitely dense computer, with computational powers greater than that of a Turing Machine." He also published what seems to be the first serious work on team or collective intelligence (COIN) which he says puts this subject on a sound scientific footing. Although he has published various versions of these over two decades in some of the most prestigious peer reviewed physics journals (e.g., Physica D 237: 257-81(2008)) as well as in NASA journals and has gotten news items in major science journals, few seem to have noticed and I have looked in dozens of recent books on physics, math, decision theory and computation without finding a reference.

It is most unfortunate that Yanofsky and others have no awareness of Wolpert, since his work is the ultimate extension of computing, thinking, inference, incompleteness, and undecidability, which he achieves (like many proofs in Turing machine theory) by extending the liar paradox and Cantor's diagonalization to include all possible universes and all beings or mechanisms and thus may be seen as the last word not only on computation, but on cosmology or even deities. He achieves this extreme generality by partitioning the inferring universe using worldlines (i.e., in terms of what it does and not how it does it) so that his mathematical proofs are independent of any particular physical laws or computational structures in establishing the physical limits of inference for past, present and future and all possible calculation, observation and control. He notes that even in a classical universe Laplace was wrong about being able to perfectly predict the future (or even perfectly depict the past or present) and that his impossibility results can be viewed as a "non-quantum mechanical uncertainty principle" (i.e., there cannot be an infallible observation or control device). Any universal physical device must be infinite, it can only be so at one moment in time, and no reality can have more than one (the "monotheism theorem"). Since space and time do not appear in the

definition, the device can even be the entire universe across all time. It can be viewed as a physical analog of incompleteness with two inference devices rather than one self-referential device. As he says, "either the Hamiltonian of our universe proscribes a certain type of computation, or prediction complexity is unique (unlike algorithmic information complexity) in that there is one and only one version of it that can be applicable throughout our universe."

Another way to say this is that one cannot have two physical inference devices (computers) both capable of being asked arbitrary questions about the output of the other, or that the universe cannot contain a computer to which one can pose any arbitrary computational task, or that for any pair of physical inference engines, there are always binary valued questions about the state of the universe that cannot even be posed to at least one of them. One cannot build a computer that can predict an arbitrary future condition of a physical system before it occurs, even if the condition is from a restricted set of tasks that can be posed to it—that is, it cannot process information (though this is a vexed phrase as S and Read and others note) faster than the universe. The computer and the arbitrary physical system it is computing do not have to be physically coupled and it holds regardless of the laws of physics, chaos, quantum mechanics, causality or light cones and even for an infinite speed of light. The inference device does not have to be spatially localized but can be nonlocal dynamical processes occurring across the entire universe. He is well aware that this puts the speculations of Wolfram, Landauer, Fredkin, Lloyd etc., concerning the universe as computer or the limits of "information processing", in a new light (though the indices of their writings make no reference to him and another remarkable omission is that none of the above are mentioned by Yanofsky either).

Wolpert says it shows that the universe cannot contain an inference device that can process information as fast as it can, and since he shows you cannot have a perfect memory nor perfect control, its past, present or future state can never be perfectly or completely depicted, characterized, known or copied. He also proved that no combination of computers with error correcting codes can overcome these limitations. Wolpert also notes the critical importance of the observer ("the liar") and this connects us to the familiar conundrums of physics, math and language that concern Yanofsky. Again cf. Floyd on W:"He is articulating in other words a generalized *form* of diagonalization. The argument is thus generally applicable, not only to decimal expansions, but to any purported listing or rule-governed expression of them; it does not rely on any particular notational device or preferred spatial arrangements of signs. In that sense, Wittgenstein's argument appeals to no picture and it is not essentially diagrammatical or representational, though it may be diagrammed and insofar as it is a *logical* argument, its logic may be represented formally). Like Turing's arguments, it is free of a direct tie to any particular formalism. [The parallels to Wolpert are obvious.] Unlike Turing's arguments, it explicitly invokes the notion of a language-game and applies to (and presupposes) an everyday conception of the notions of *rules* and of the *humans who follow them*. Every line in the diagonal presentation above is conceived as an instruction or command, analogous to an order given to a human being..." It should be obvious how Wolpert's work is a perfect illustration of W's ideas of the separate issues of science or mathematics and those of philosophy (language games).

Yanofsky also does not make clear the major overlap that now exists (and is expanding rapidly) between game theorists, physicists, economists, mathematicians, philosophers, decision theorists and others, all of whom have been publishing for decades closely related proofs of undecidability, impossibility, uncomputability, and incompleteness. One of the more bizarre is the recent proof by Armando Assis that in the relative state formulation of quantum mechanics one can setup a zero sum game between the universe and an observer using the Nash Equilibrium, from which follow the Born rule and the collapse of the wave function. Godel was first to demonstrate an impossibility result, and (until the remarkable papers of David Wolpert—see below and my review article) it is the most far reaching (or just trivial/incoherent), but there have been an avalanche of others. One of the earliest in decision theory was the famous General Impossibility Theorem (GIT) discovered by Kenneth Arrow in 1951 (for which he got the Nobel Prize in economics in 1972—and five of his students are now Nobel laureates so this is not fringe science). It states roughly that no reasonably consistent and fair voting system (i.e., no method of aggregating individuals' preferences into group preferences) can give sensible results. The group is either dominated by one person, and so GIT is often called the "dictator theorem", or there are intransitive preferences. Arrow's original paper was titled "A Difficulty in the Concept of Social Welfare" and can be stated like this:" It is impossible to formulate a social preference ordering that satisfies all of the following conditions: Nondictatorship; Individual Sovereignty; Unanimity; Freedom From Irrelevant Alternatives; Uniqueness of Group Rank." Those familiar with modern decision theory accept this and the many related constraining theorems as their starting points. Those who are not may find it (and

all these theorems) incredible and in that case they need to find a career path that has nothing to do with any of the above disciplines. See "The Arrow Impossibility Theorem"(2014) or "Decision Making and Imperfection"(2013) among legions of publications.

Yanofsky mentions the famous impossibility result of Brandenburger and Keisler (2006) for two person games (but of course not limited to "games" and like all these impossibility results it applies broadly to decisions of any kind) which shows that any belief model of a certain kind leads to contradictions. One interpretation of the result is that if the decision analyst's tools (basically just logic) are available to the players in a game, then there are statements or beliefs that the players can write down or 'think about' but cannot actually hold (i.e., no clear COS). "Ann believes that Bob assumes that Ann believes that Bob's assumption is wrong" seems unexceptionable and 'recursion' (another LG) has been assumed in argumentation, linguistics, philosophy etc., for a century at least, but they showed that it is impossible for Ann and Bob to assume these beliefs. And there is a rapidly growing body of such impossibility results for 1 or multiplayer decision situations (e.g., it grades into Arrow, Wolpert, Koppel and Rosser etc). For a good technical paper from among the avalanche on the B&K paradox, get Abramsky and Zvesper's paper from arXiv.org, which takes us back to the liar paradox and Cantor's infinity (as its title notes it is about "interactive forms of diagonalization and self-reference") and thus to Floyd, Rodych, Berto, W and Godel. Many of these papers quote Yanofsky's paper "A universal approach to self-referential paradoxes and fixed points. *Bulletin of Symbolic Logic*, 9(3):362–386, 2003. Abramsky (a polymath who is among other things a pioneer in quantum computing) is a friend, and so Yanofsky contributes a paper to the recent Festschrift to him 'Computation, Logic, Games and Quantum Foundations' (2013). For maybe the best recent(2013) commentary on the BK and related paradoxes see the 165p powerpoint lecture free on the net by Wes Holliday and Eric Pacuit 'Ten Puzzles and Paradoxes about Knowledge and Belief'. For a good multi-author survey see 'Collective Decision Making(2010).

Since Godel's famous theorems are corollaries of Chaitin's theorem showing algorithmic 'randomness' ('incompleteness') throughout math (which is just another of our symbolic systems), it seems inescapable that thinking (behavior, language, mind) is full of impossible, random or incomplete statements and situations. Since we can view each of these domains as symbolic systems evolved by chance to make our psychology work, perhaps it should be regarded as unsurprising that they are not "complete". For math, Chaitin says this 'randomness' (again a group of LG's) shows there are limitless theorems that are true but unprovable— i.e., true for no reason. One should then be able to say that there are limitless statements that make perfect "grammatical" sense that do not describe actual situations attainable in that domain. I suggest these puzzles go away if one considers W's views. He wrote many notes on the issue of Godel's Theorems, and the whole of his work concerns the plasticity, "incompleteness" and extreme context sensitivity of language, math and logic. The recent papers of Rodych, Floyd and Berto are the best introduction I know of to W's remarks on the foundations of mathematics and so to philosophy.

As noted, David Wolpert has derived some amazing theorems in Turing Machine Theory and the limits of computation that are very apropos here. They have been almost universally ignored but not by well known econometricians Koppl and Rosser, who, in their famous 2002 paper "All that I have to say has already crossed your mind", give three theorems on the limits to rationality, prediction and control in economics. The first uses Wolpert's theorem on the limits to computability to show some logical limits to forecasting the future. Wolpert notes that it can be viewed as the physical analog of Godel's incompleteness theorem and K and R say that their variant can be viewed as its social science analog, though Wolpert is well aware of the social implications. K and R's second theorem shows possible nonconvergence for Bayesian (probabilistic) forecasting in infinite-dimensional space. The third shows the impossibility of a computer perfectly forecasting an economy with agents knowing its forecasting program. The astute will notice that these theorems can be seen as versions of the liar paradox and the fact that we are caught in impossibilities when we try to calculate a system that includes ourselves has been noted by Wolpert, Koppl, Rosser and others in these contexts and again we have circled back to the puzzles of physics when the observer is involved. K&R conclude "Thus, economic order is partly the product of something other than calculative rationality". Bounded rationality is now a major field in itself, the subject of thousands of papers and hundreds of books.

Reasoning is another word for thinking, which is a disposition like knowing, understanding, judging etc. As Wittgenstein was the first to explain, these dispositional verbs describe propositions (sentences which can be true or false) and thus have what Searle calls Conditions of Satisfaction (COS). That is, there are public states of affairs that we recognize as showing their truth or falsity. "Beyond reason" would mean a sentence whose truth conditions are

not clear and the reason would be that it does not have a clear context. It is a matter of fact if we have clear COS (i.e., meaning) but we just cannot make the observation--this is not beyond reason but beyond our ability to achieve, but it's a philosophical (linguistic) matter if we don't know the COS. "Are the mind and the universe computers?" sounds like it needs scientific or mathematical investigation, but it is only necessary to clarify the context in which this language will be used since these are ordinary and unproblematic terms and it is only their context which is puzzling.

As always, the first thing to keep in mind is W's dictum that there are no new discoveries to be made in philosophy nor explanations to be given, but only clear descriptions of behavior (language). Once one understands that all the problems are confusions about how language works, we are at peace and philosophy in their sense has achieved its purpose. As W/S have noted, there is only one reality, so there are not multiple versions of the mind or life or the world that can meaningfully be given, and we can only communicate in our one public language. There cannot be a private language and any "private inner" thoughts cannot be communicated and cannot have any role in our social life. It should also be very straightforward to solve philosophical problems in this sense. "Now if it is not the causal connections which we are concerned with, then the activities of the mind lie open before us." Wittgenstein "The Blue Book" p6 (1933)

We have only one set of genes and hence one language (mind), one behavior (human nature or evolutionary psychology), which W and S refer to as the bedrock or background and reflecting upon this we generate philosophy which S calls the logical structure of rationality and I call the descriptive psychology of Higher Order Thought (HOT) or, taking the cue from W, the study of the language describing HOT. The only interest in reading anyone's comments on philosophical aspects of human behavior (HOT) is to see if its translation into the W/S framework gives some clear descriptions which illuminate the use of language. If not, then showing how they have been bewitched by language dispels the confusion. I repeat what Horwich has noted on the last page of his superb 'Wittgenstein's Metaphilosophy' (see my review) : "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."

Nevertheless, W/S do much explaining (or as W suggested we ought to say "describing") and S states that the logical structure of rationality constitutes various theories, and there is no harm in it, provided one realizes they are comprised of a series of examples that let us get a general idea of how language (the mind) works and that as his "theories" are explicated via examples they become more like W's perspicuous descriptions. "A rose by any other name..." When there is a question one has to go back to the examples or consider new ones. As W noted, language (life) is limitlessly complex and context sensitive (W being the unacknowledged father of Contextualism), and so it is utterly unlike physics where one can often derive a formula and dispense with the need for further examples. Scientism (the use of scientific language and the causal framework) leads us astray in describing HOT.

Once again: "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."(BBB p18). Unlike so many others, S has largely avoided and often demolished scientism, but there is a residue which evinces itself when he insists on using dispositional S2 terms which describe public behavior (thinking, knowing believing etc.) to describe S1 'processes' in the brain, that e.g., we can understand consciousness by studying the brain, and that he is prepared to give up causality, will or mind. W made it abundantly clear that such words are the hinges or basic language games and giving them up or even changing them is not a coherent concept. As noted in my other reviews, I think the residue of scientism results from the major tragedy of S's (and nearly all other philosopher's) philosophical life --his failure to take the later W seriously enough (W died a few years before S went to England to study) and making the common fatal mistake of thinking he is smarter than W.

"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." Zettelp312-314

"Our method is *purely descriptive*, the descriptions we give are not hints of explanations." BBB p125

It follows both from W's 3rd period work and contemporary psychology, that 'will', 'self' and 'consciousness' are axiomatic true-only elements of the reptilian subcortical System One (S1) composed of perceptions, memories and reflexes, and there is no possibility (intelligibility) of demonstrating (of giving sense to) their falsehood. As W made so wonderfully clear, they are the basis for judgment and so cannot be judged. The true-only axioms of our psychology are not evidential.

Philosophers are rarely clear about exactly what it is that they expect to contribute that other students of behavior (i.e., *scientists*) do not, so, noting W's above remark on science envy, I will quote from P.M.S Hacker (the leading expert on W for many years) who gives a good start on it and a counterblast to scientism.

"Traditional epistemologists want to know whether knowledge is true belief and a further condition ..., or whether knowledge does not even imply belief ... What needs to be clarified if these questions are to be answered is *the web of our epistemic concepts*, the ways in which the various concepts hang together, the various forms of their compatibilities and incompatibilities, their point and purpose, their presuppositions and different forms of context dependency. To this venerable exercise in connective analysis, scientific knowledge, psychology, neuroscience and self-styled cognitive science can contribute nothing whatsoever." (Passing by the naturalistic turn: on Quine's *cul-de-sac*- p15-2005)

The deontic structures or 'social glue' are the automatic fast actions of S1 producing the slow dispositions of S2 which are inexorably expanded during personal development into a wide array of automatic universal cultural deontic relationships so well described by Searle. I expect this fairly well abstracts the basic structure of social behavior.

Several comments bear repeating. So, recognizing that S1 is only upwardly causal (world to mind) and contentless (lacking representations or information) while S2 has content (i.e. is representational) and is downwardly causal (mind to world) (e.g., see my review of Hutto and Myin's 'Radical Enactivism'), I would translate the paragraphs from S's MSW p39 beginning "In sum" and ending on pg 40 with "conditions of satisfaction" as follows.

In sum, perception, memory and reflexive prior intentions and actions ('will') are caused by the automatic functioning of our S1 true-only axiomatic EP as modified by S2 ('free will'). We try to match how we desire things to be with how we think they are. We should see that belief, desire and imagination--desires time shifted and decoupled from intention-- and other S2 propositional dispositions of our slow thinking later evolved second self, are totally dependent upon (have their Conditions of Satisfaction (COS) originating in) the Causally Self Reflexive (CSR) rapid automatic primitive true- only reflexive S1. In language and neurophysiology there are intermediate or blended cases such as intending (prior intentions) or remembering, where the causal connection of the COS with S1 is time shifted, as they represent the past or the future, unlike S1 which is always in the present. S1 and S2 feed into each other and are often orchestrated seamlessly by learned deontic cultural relations, so that our normal experience is that we consciously control everything that we do. This vast arena of cognitive illusions that dominate our life Searle has described as 'The Phenomenological Illusion' (TPI).

"Some of the most important logical features of intentionality are beyond the reach of phenomenology because they have no immediate phenomenological reality... Because the creation of meaningfulness out of meaninglessness is not consciously experienced...it does not exist...This is... the phenomenological illusion." Searle PNC p115-117

Disposition words (Preferences--see above table) have at least two basic uses. One refers to the true- only sentences describing our direct perceptions, reflexes (including basic speech) and memory, i.e., our innate axiomatic S1 psychology which are Causally Self Reflexive (CSR)-(called reflexive or intransitive in W's BBB), and the S2 use as disposition words (thinking, understanding, knowing etc.) 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) and are not CSR (called transitive in BBB).

"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 about 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 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 though we had denied mental processes. And naturally we don't want to deny them. W's PI p308

"...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." Searle PNCp193

"The intentional state represents its conditions of satisfaction...people erroneously suppose that every mental representation must be consciously thought...but the notion of a representation as I am using it is a functional and not an ontological notion. Anything that has conditions of satisfaction, that can succeed or fail in a way that is characteristic of intentionality, is by definition a representation of its conditions of satisfaction...we can analyze the structure of the intentionality of social phenomena by analyzing their conditions of satisfaction." Searle MSW p28-32

Like Carruthers, Coliva, S and others sometime state (e.g., p66-67 MSW) that S1 (i.e., memories, perceptions, reflex acts) has a propositional (i.e., true-false) structure. As I have noted above, and many times in my reviews, it seems crystal clear that W is correct, and it is basic to understanding behavior, that only S2 is propositional and S1 is axiomatic and true-only. However since what S and various authors here call the background (S1) gives rise to S2 and is in turn partly controlled by S2, there has to be a sense in which S1 is able to become propositional and they and Searle note that the unconscious or conscious but automated activities of S1 must be able to become the conscious or deliberative ones of S2. They both have COS and Directions of Fit (DOF) because the genetic, axiomatic intentionality of S1 generates that of S2, but if S1 were propositional in the same sense it would mean that skepticism is intelligible, the chaos that was philosophy before W would return, and in fact if true, life would not be possible. It would e.g., mean that truth and falsity and the facts of the world could be decided without consciousness. As W stated often and showed so brilliantly in his last book 'On Certainty', life must be based on certainty-- automated unconscious rapid reactions. Organisms that always have a doubt and pause to reflect will die--no evolution, no people, no philosophy.

Again I will repeat some crucial notions. Another idea clarified by S is the Desire Independent Reasons for Action (DIRA). I would translate S's summary of practical reason on p127 of MSW as follows: "We yield to our desires (need to alter brain chemistry), which typically include Desire -Independent Reasons for Action (DIRA--i.e., desires displaced in space and time), which produce dispositions to behavior that commonly result sooner or later in muscle movements that serve our inclusive fitness (increased survival for genes in ourselves and those closely related)." And I would restate his description on p129 of how we carry out DIRA2 as "The resolution of the paradox is that the unconscious DIRA1 serving long term inclusive fitness generate the conscious DIRA2 which often override the short term personal immediate desires." Agents do indeed consciously create the proximate reasons of DIRA2, but these are very restricted extensions of unconscious DIRA1 (the ultimate cause). Obama and the Pope wish to help the poor because it is "right" but the ultimate cause is a change in their brain chemistry that increased the inclusive fitness of their distant ancestors. Evolution by inclusive fitness has programmed the unconscious rapid reflexive causal actions of S1 which often 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 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 S '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 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 lovely aphorisms (p132 Budd-Wittgenstein's Philosophy of Psychology) "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 Evolutionary Psychology (EP) and that in spite of his frequent warnings against theorizing and generalizing, this is about as broad a characterization of higher order descriptive psychology (philosophy) as one can find—beyond even Searle's 'theories' (who often criticizes W for his famous anti-theoretical stance).

"Every sign is capable of interpretation but the *meaning* mustn't be capable of interpretation. It is the last interpretation" W BBB p34

"Searle's Philosophy and Chinese Philosophy" (2008) is a superb and unique book, but so totally ignored that my 2015 review is the only one! It should be obvious that philosophical issues are always about mistakes in language used to describe our *universal* innate psychology and there is no useful sense in which there can be a Chinese, French, Christian, Feminist etc. view of them. Such views can exist of philosophy in the broad sense but that is not what philosophy of mind (or to W, S or me what any interesting and substantive philosophy) is about. It could take a whole book to discuss this and S does an excellent job, so I will just comment here that re p35 propositions are S2 and not mental states which are S1 as W made quite clear over ¼ of a century ago and that both Quine and Davidson were equally confused about the basic issues involved (both Searle and Hacker have done excellent demolitions of Quine). As often, S's discussion is marred by his failure to carry his understanding of W's "background" to its logical conclusion and so he suggests (as he has frequently) that he might have to give up the concept of free will—a notion I find (with W) is incoherent. What are the COS (the truthmaking event, the test or proof) that could show the truth vs the falsity of our not having a choice to lift our arm?

Likewise (p62) nobody can give arguments for the background (i.e., our axiomatic EP) as our being able to talk at all presupposes it (as W noted frequently). It's also true that "reduction" along with "monism", "reality", etc. are complex language games and they do not carry meaning along in little backpacks! One must dissect ONE usage in detail to get clear and then see how another usage (context) differs.

Philosophers (and would-be philosophers) create imaginary problems by trying to answer questions that have no clear sense. This situation is nicely analyzed by Finkelstein in 'Holism and Animal Minds' and so admirably summed up by Read in 'The Hard Problem of Consciousness' quoted above.

Wittgenstein's "Culture and Value" (published in 1980), but written decades earlier), though it's perhaps his least interesting book, has much that is pertinent to this discussion, and of course to a large part of modern intellectual life.

"There is no religious denomination in which the misuse of metaphysical expressions has been responsible for so much sin as it has in mathematics."

"People say again and again that philosophy doesn't really progress, that we are still occupied with the same philosophical problems as were the Greeks. But the people who say this don't understand why it has to be so. It is because our language has remained the same and keeps seducing us into asking the same questions. As long as there continues to be a verb 'to be' that looks as if it functions in the same way as 'to eat' and 'to drink', as long as we still have the adjectives 'identical', 'true', 'false', 'possible', as long as we continue to talk of a river of time, of an expanse of space, etc., etc., people will keep stumbling over the same puzzling difficulties and find themselves staring at something which no explanation seems capable of clearing up. And what's more, this satisfies a longing for the transcendent, because, insofar as people think they can see 'the limits of human understanding', they believe of course that they can see beyond these."

Likewise let us try to distill the essence from two of Searle's recent works.

"Can there be reasons for action which are binding on a rational agent just in virtue of the nature of the fact reported in the reason statement, and independently of the agent's desires, values, attitudes and evaluations?...The real

paradox of the traditional discussion is that it tries to pose Hume's guillotine, the rigid fact-value distinction, in a vocabulary, the use of which already presupposes the falsity of the distinction." Searle PNC p165-171

"...all status functions and hence all of institutional reality, with the exception of language, are created by speech acts that have the logical form of Declarations...the forms of the status function in question are almost invariably matters of deontic powers...to recognize something as a right, duty, obligation, requirement and so on is to recognize a reason for action...these deontic structures make possible desire-independent reasons for action...The general point is very clear: the creation of the general field of desire-based reasons for action presupposed the acceptance of a system of desire-independent reasons for action." Searle PNC p34-49

That is, the functioning of our linguistic System 2 presupposes that of our pre-linguistic System 1.

"Some of the most important logical features of intentionality are beyond the reach of phenomenology because they have no immediate phenomenological reality... Because the creation of meaningfulness out of meaninglessness is not consciously experienced...it does not exist...This is... the phenomenological illusion." Searle PNC p115-117

That is, our mental functioning is usually so preoccupied with system 2 as to be oblivious to system 1.

"...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." Searle PNCp193

"So status functions are the glue that hold society together. They are created by collective intentionality and they function by carrying deontic powers...With the important exception of language itself, all of institutional reality and therefor in a sense all of human civilization is created by speech acts that have the logical form of Declarations...all of human institutional reality is created and maintained in existence by (representations that have the same logical form as) Status Function Declarations, including the cases that are not speech acts in the explicit form of Declarations." Searle MSW p11-13

"Beliefs, like statements, have the downward or mind (or word)-to-world direction of fit. And desires and intentions, like orders and promises, have the upward or world-to-mind (or word) direction of fit. Beliefs or perceptions, like statements, are supposed to represent how things are in the world, and in that sense they are supposed to fit the world; they have the mind-to-world direction of fit. The conative- volitional states such as desires, prior intentions and intentions-in-action, like orders and promises, have the world-to-mind direction of fit. They are not supposed to represent how things are but how we would like them to be or how we intend to make them be...In addition to these two faculties, there is a third, imagination, in which the propositional content is not supposed to fit reality in the way that the propositional contents of cognition and volition are supposed to fit...the world-relating commitment is abandoned and we have a propositional content without any commitment that it represent with either direction of fit." Searle MSWp15

"The intentional state represents its conditions of satisfaction...people erroneously suppose that every mental representation must be consciously thought...but the notion of a representation as I am using it is a functional and not an ontological notion. Anything that has conditions of satisfaction, that can succeed or fail in a way that is characteristic of intentionality, is by definition a representation of its conditions of satisfaction...we can analyze the structure of the intentionality of social phenomena by analyzing their conditions of satisfaction." Searle MSW p28-32

"But there is no prelinguistic analog for the Declarations. Prelinguistic intentional states cannot create facts in the world by representing those facts as already existing. This remarkable feat requires a language" MSW p69

"...once you have language, it is inevitable that you will have deontology because there is no way you can make explicit speech acts performed according to the conventions of a language without creating commitments. This is true not just for statements but for all speech acts" MSW p82

A critical notion introduced by S many years ago is Conditions of Satisfaction (COS) on our thoughts (propositions of S2) which W called inclinations or dispositions to act--still called by the inappropriate term 'propositional attitudes' by many. COS are explained by S in many places such as on p169 of PNC: "Thus saying something and meaning it involves two conditions of satisfaction. First, the condition of satisfaction that the utterance will be produced, and second, that the utterance itself shall have conditions of satisfaction." As S states it in PNC, "A proposition is anything at all that can determine a condition of satisfaction...and a condition of satisfaction... is that such and such is the case." Or, one needs to add, that might be or might have been or might be imagined to be the case, as he makes clear in MSW. Regarding intentions, "In order to be satisfied, the intention itself must function causally in the production of the action."(MSWp34).

"Speaker meaning... is the imposition of conditions of satisfaction on conditions of satisfaction. The capacity to do this is a crucial element of human cognitive capacities. It requires the ability to think on two levels at once, in a way that is essential for the use of language. At one level, the speaker intentionally produces a physical utterance, but at another level the utterance represents something. And the same duality infects the symbol itself. At one level it is a physical object like any other. At another level it has a meaning: it represents a type of a state of affairs" MSW p74

One way of regarding this is that the unconscious automatic System 1 activates the higher cortical conscious personality of System 2, bringing about throat muscle contractions which inform others that it sees the world in certain ways, which commit it to potential actions. A huge advance over prelinguistic or protolinguistic interactions in which gross muscle movements were able to convey very limited information about intentions.

Most people will benefit greatly from reading W's "On Certainty" or "RPP1 and 2" or DMS's two books on OC (see my reviews) as they make clear the difference between true-only sentences describing S1 and true or false propositions describing S2. This strikes me as a far superior approach to Searle's taking S1 perceptions as propositional (at least in some places in his work) since they can only become T or F (aspectual as S calls them in MSW) after one begins thinking about them in S2.

Searle often describes the critical need to note the various levels of description of one event so for Intention in Action (IA) "We have different levels of description where one level is constituted by the behavior at the lower level...in addition to the constitutive by way of relation, we also have the causal by means of relation."(p37 MSW).

"The crucial proof that we need a distinction between prior intentions and intentions-in-action is that the conditions of satisfaction in the two cases are strikingly different."(p35 MSW). The COS of PI need a whole action while those of IA only a partial one. He makes clear (e.g., p34) that prior intentions (PI) are mental states (i.e., unconscious S1) while they result in intentions-in-action (IA) which are conscious acts (i.e., S2) but both are causally self-reflexive (CSR). The critical argument that both are CSR is that (unlike beliefs and desires) it is essential that they figure in bringing about their COS. These descriptions of cognition and volition are summarized in Table 2.1 (p38 MSW), which Searle has used for many years and is the basis for the much extended one I present here and in my many articles. In my view it helps enormously to relate this to modern psychological research by using my S1, S2 terminology and W's true-only vs propositional (dispositional) description. Thus CSR references S1 true-only perception, memory and intention, while S2 refers to dispositions such as belief and desire.

It follows in a very straightforward and inexorable fashion, both from W's 3rd period work and from the observations of contemporary psychology, that 'will', 'self' and 'consciousness' are axiomatic true-only elements of System 1 just like seeing, hearing, etc., and there is no possibility (intelligibility) of demonstrating (of giving sense to) their falsehood. As W made so wonderfully clear numerous times, they are the basis for judgment and so cannot be judged. The true-only axioms of our psychology are not evidential.

It is critical to understand the notion of 'function' that is relevant here. "A function is a cause that serves a purpose...In this sense functions are intentionality-relative and therefore mind dependent...status functions... require... collective imposition and recognition of a status"(p59 MSW).

I suggest the translation of "The intentionality of language is created by the intrinsic, or mind- independent

intentionality of human beings" (p66 MSW) as "The linguistic, conscious dispository of S2 is generated by the unconscious axiomatic reflexive functions of S1". That is, one must keep in mind that behavior is programmed by biology.

Once again, Searle states (e.g., p66-67 MSW) that S1 (i.e., memories, perceptions, reflex acts) has a propositional (i.e., true-false) structure. As I have noted above, and many times in other reviews, it seems crystal clear that W is correct, and it is basic to understanding behavior, that only S2 is propositional and S1 is axiomatic and true-only. They both have COS and Directions of Fit (DOF) because the genetic, axiomatic intentionality of S1 generates that of S2 but if S1 were propositional in the same sense it would mean that skepticism is intelligible, the chaos that was philosophy before W would return, and in fact if true, life would not be possible. As W showed countless times and biology shows so clearly, life must be based on certainty--automated unconscious rapid reactions. Organisms that always have a doubt and pause to reflect will die--no evolution, no people, no philosophy.

Language and writing are special because the short wavelength of vibrations of vocal muscles enable much higher bandwidth information transfer than contractions of other muscles and this is on average several orders of magnitude higher for visual information.

S1 and S2 are critical parts of human EP and are the results, respectively of billions and hundreds of millions of years of natural selections by inclusive fitness. They facilitated survival and reproduction in the EEA (Environment of Evolutionary Adaptation). Everything about us physically and mentally bottoms out in genetics. All the vague talk in S's MSW (e.g., p114) about 'extra-linguistic conventions' and 'extra semantical semantics' is in fact referring to EP and especially to the unconscious automatisms of S1 which are the basis for all behavior. As W said many times, the most familiar is for that reason invisible.

Here again is my summary (following S in MSW) of how practical reason operates: We yield to our desires (need to alter brain chemistry), which typically include Desire -Independent Reasons for Action (DIRA-- i.e., desires displaced in space and time, often for reciprocal altruism--RA), which produce dispositions to behavior that commonly result sooner or later in muscle movements that serve our inclusive fitness- IF (increased survival for genes in ourselves and those closely related).

I think if suitably defined, DIRA are universal in higher animals and not at all unique to humans (think mother hen defending her brood from a fox) if we include the automated prelinguistic reflexes of S1 (i.e., DIRA1), but certainly the higher order DIRA of S2 (DIRA2) that require language are uniquely human. The paradox of how we can voluntarily carry out DIRA2 (i.e., the S2 acts and their cultural extensions that are desire independent) is that the unconscious DIRA1, serving long term inclusive fitness, generate the conscious DIRA2 which often override the short term personal immediate desires. Agents do indeed consciously create the proximate *reasons* of DIRA2, but these are very restricted extensions of unconscious or merely automated DIRA1 (the ultimate *cause*).

Following W, it is quite clear that choice is part of our axiomatic S1 true-only reflexive actions and cannot be questioned without contradiction as S1 is the basis for questioning. You cannot doubt you are reading this page as your awareness of it is the basis for doubting.

Inevitably, W's famous demonstrations of the uselessness of introspection and the impossibility of a truly private language pop up repeatedly ("...introspection can never lead to a definition..." p8). The basics of this argument are extremely simple--no test, no language and a test can only be public. If I grow up alone on a desert island with no books and one day decide to call the round things on the trees 'coconut' and then next day I see one and say 'coconut' it seems like I have started on a language. But suppose what I say (since there is no person or dictionary to correct me) is 'coca' or even 'apple' and the next day something else? Memory is notoriously fallible and we have great trouble keeping things straight even with constant correction from others and with incessant input from media. This may seem like a trivial point but it is central to the whole issue of the Inner and the Outer--i.e., our true-only untestable statements of our experience vs the true or false testable statements regarding everything in the world, including our own behavior. Though W explained this with many examples beginning over ¾ of a century ago, it has rarely been understood and it is impossible to go very far with any discussion of behavior unless one does. As W, S, Hutto, Budd, Hacker, DMS, Johnston and others have explained, anyone who thinks W has an affinity with Skinner, Quine, Dennett, Functionalism or any other behaviorist excretions that deny our inner life needs to go back to the

beginning.

Budd's 'Wittgenstein's Philosophy of Psychology' (1991) is one of the better works for gaining insight so I discuss it in detail (see my review for more).

On p21 he begins discussing dispositions (i.e., S2 abilities such as thinking, knowing, believing) which seem like they refer to mental states (i.e., to S1 automatisms), another major confusion which W was the first to set straight. Thus on p28 'reading' must be understood as another dispositional ability that is not a mental state and has no definite duration like thinking, understanding, believing etc.

Few notice (Budd p29-32, Stern, Johnston and Moyal-Sharrock are exceptions) that W presciently (decades before chaos and complexity science came into being) suggested that some mental phenomena may originate in chaotic processes in the brain—that e.g., there is not anything corresponding to a memory trace. He also suggested several times that the causal chain has an end and this could mean both that it is just not possible (regardless of the state of science) to trace it any further or that the concept of 'cause' ceases to be applicable beyond a certain point (p34). Subsequently, many have made similar suggestions without any idea that W anticipated them by decades (in fact over a century now in a few instances). On p32 the "counter-factual conditionals" refer again to dispositions such as "may think it's raining" which are possible states of affairs (or potential actions—Searle's conditions of satisfaction) which may arise in chaos. It may be useful to tie this to Searle's 3 gaps of intentionality, which he finds critically necessary.

Budd notes W's famous comment on p33 -- "The mistake is to say that there is anything that meaning something consists in." Though W is correct that there is no mental state that constitutes meaning, S notes (as quoted above) 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 is an act and not a mental state. As Budd notes on p35 this can be seen as another statement of his argument against private language (personal interpretations vs publicly testable ones). Likewise with rule following and interpretation on p36 -41—they can only be publicly checkable acts—no private rules or private interpretations either. And one must note that many (most famously Kripke) miss the boat here, being misled by W's frequent referrals to community practice into thinking it's just arbitrary public practice that underlies language and social conventions. W makes clear many times that such conventions are only possible given an innate shared psychology which he often calls the background. Budd correctly rejects this misinterpretation several times (e.g., p58).

In Budd's next chapter he deals with sensations which in my terms (and in modern psychology) is S1 and in W's terms the true-only undoubtable and untestable background. His comment (p47)... that our beliefs about our present sensations rest upon an absolutely secure foundation—the 'myth of the given' is one of the principal objects of Wittgenstein's attack..." can easily be misunderstood. Firstly, he makes the universal mistake of calling these 'beliefs', but it is better to reserve this word for S2 true or false dispositions. As W made very clear, the sensations, memories and reflexive acts of S1 are axiomatic and not subject to belief in the usual sense but are better called understandings (my U1). Unlike our S2 beliefs (including those about other peoples S1 experiences), there is no mechanism for doubt. Budd explains this well, as on p52 where he notes that there is no possible justification for saying one is in pain. That is, justifying means testing and that is possible with S2 dispositional slow conscious thinking, not S1 reflexive fast unconscious processing. His discussion of this on p52-56 is excellent but in my view, like everyone who discusses W on rules, private language and the inner, all he needs to do is say that in S1 there is no possible test and this is the meaning of W's famous the 'inner process' stands in need of outward criteria'. That is, introspection is vacuous.

Budd's footnote 21 confuses the true-only causal experiences of S1 and the reasoned dispositions of S2.

The point of the next few pages on names for 'internal objects' (pains, beliefs, thoughts etc.) is again that they have their use (meaning) and it is the designation of dispositions to act, or in Searle's terms, the specification of Conditions of Satisfaction, which make the utterance true.

Again, Budd's discussion of "Sensations and Causation" is wrong in stating that we 'self-ascribe' or 'believe' in our sensations or 'take a stance' (Dennett) that we have a pain or see a horse, but rather we have no choice—S1 is true-

only and a mistake is a rare and bizarre occurrence and of an entirely different kind than a mistake in S2. And S1 is *causal* as opposed to S2, which concerns reasons, and that is why seeing the horse or feeling the pain or jumping out of the way of a speeding car is not subject to judgments or mistakes. But he gets it right again—"So the infallibility of non-inferential self-ascriptions of pain is compatible with the thesis that a true self-ascription of pain must be caused by a physical event in the subject's body, which is identical with the pain he experiences (p67)." I do not accept his following statement that W would not accept this based on one or two comments in his entire corpus, since in his later work (notably OC) he spends hundreds of pages describing the causal automated nature of S1 and how it feeds into (causes) S2 which then feeds back to S1 to cause muscle movements (including speech). Animals survive only because their life is totally directed by the phenomena around them which are highly predictable (dogs may jump but they never fly).

The next chapter on Seeing Aspects describes W's extensive comments on how S1 and S2 interact and where our language is ambiguous in what we may mean by 'seeing'. In general it's clear that 'seeing as' or aspectual seeing is part of the slow S2 brain actions while just seeing is the true-only S1 automatisms, but they are so well integrated that it is often possible to describe a situation in multiple ways which explains W's comment on p97. He notes that W is exclusively interested in what I have elsewhere called 'Seeing2' or 'Concepts2'—i.e., aspectual or S2 higher order processing of images.

Here, as throughout this book and indeed in any discussion of W or of behavior, it is of great value to refer to Johnston's 'Wittgenstein: Rethinking the Inner' (1993) and especially to his discussions of the indeterminate nature of language.

In Budd's chapter 5 we again deal with a major preoccupation of W's later work—the relations between S1 and S2. As I have noted in my other reviews, few have fully understood the later W and, lacking the S1, S2 framework it is not surprising. Thus Budd's discussion of seeing (automatic S1) vs visualizing (conscious S2 which is subject to the will) is severely hampered. Thus one can understand why one cannot imagine an object while seeing it as the domination of S2 by S1 (p110). And on p115 it is the familiar issue of there being no test for my inner experiences, so whatever I say comes to mind when I imagine Jack's face counts as the image of Jack. Similarly with reading and calculation which can refer to S1, S2 or a combination and there is the constant temptation to apply S2 terms to S1 processes where that lack of any test makes them inapplicable. See Bennet and Hacker's 'Neurophilosophy', DMS, etc. for discussions. On p120 et seq. Budd mentions two of W's famous examples used for combatting this temptation—playing tennis without a ball ('S1 tennis'), and a tribe that had only S2 calculation so 'calculating in the head ('S1 calculating') was not possible. 'Playing' and 'calculating' describe actual or potential acts—i.e., they are disposition words but with plausible reflexive S1 uses so as I have said before one really ought to keep them straight by writing 'playing1' and 'playing2' etc. But we are not taught to do this and so we want to either dismiss 'calculating1' as a fantasy, or we think we can leave its nature undecided until later. Hence W's famous comment (p120)—"The decisive movement in the conjuring trick has been made, and it was the very one we thought quite innocent."

Chapter 6 explains another frequent topic of W's—that when we speak, the speech itself is our thought and there is not some other prior mental process and this can be seen as another version of the private language argument -- there are no such things as 'inner criteria' which enable us to tell what we thought before we act (speak).

The point of W's comments (p125) about other imaginable ways to use the verb 'intend' is that they would not be the same as our 'intend'—i.e., the name of a potential event (PE) and in fact it is not clear what it would mean. "I intend to eat" has the COS of eating but if it meant (COS is) eating then it wouldn't describe an intention but an action and if it meant saying the words (COS is speech) then it wouldn't have any further COS and how could it function in either case?

To the question on p127 as to when a sentence expresses a thought (has a meaning), we can say 'When it has clear COS' and this means has public truth conditions. Hence the quote 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 lovely aphorisms (p132) "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’ and that in spite of his frequent warnings against theorizing and generalizing, this is about as broad a characterization of philosophy and higher order descriptive psychology as one can find. Again this quashes Searle’s frequent criticism of W as anti-theoretical—it all depends on the nature of the generalization.

It helps greatly in this section of Budd on the harmony of thought with reality (i.e., of how dispositions like expecting, thinking, imagining work—what it means to utter them) to state them in terms of S’s COS which are the PE (possible events) which make them true. If I say I expect Jack to come then the COS (PE) which makes it true is that Jack arrives and my mental states or physical behavior (pacing the room, imagining Jack) are irrelevant. The harmony of thought and reality is that jack arrives regardless of my prior or subsequent behavior or any mental states I may have and Budd is confused or at least confusing when he states (p132 bottom) that there must be an internal description of a mental state that can agree with reality and that this is the content of a thought, as these terms should be restricted to the automatisms of S1 only and never used for the conscious functions of S2. The content (meaning) of the thought that Jack will come is the outer (public) event that he comes and not any inner mental event or state, which the private language argument shows is impossible to connect to the outer events. We have very clear verification for the outer event but none at all for ‘inner events’. And as W and S have beautifully demonstrated many times, the speech act of uttering the sentence ‘I expect Jack to come’ just is the thought that Jack will come and the COS is the same—that Jack does come. And so the answer to the two questions on p133 and the import of W’s comment on p 135 should now be crystal clear—“In virtue of what is it true that my expectation does have that content?” and “What has become now of the hollow space and the corresponding solid?” as well as “...the interpolation of a shadow between the sentence and reality loses all point. For now the sentence itself can serve as such a shadow.” And thus it should also be quite clear what Budd is referring to as to what makes it “possible for there to be the required harmony (or lack of harmony) with reality.”

Likewise with the question in the next section—what makes it true that my image of Jack is an image of him? Imagining is another disposition and the COS is that the image I have in my head is Jack and that’s why I will say ‘YES’ if shown his picture and ‘NO’ if shown one of someone else. The test here is not that the photo matches the vague image I had but that I intended it (had the COS that) to be an image of him. Hence the famous quote from W: “If God had looked into our minds he would not have been able to see there whom we were speaking of (PI p217)” 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.” Hence W’s summation (p140) that “What it always comes to in the end is that without any further *meaning*, he *calls* what happened the wish that that should happen”... 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.’ Disposition words refer to PE’s which I accept as fulfilling the COS and my mental states, emotions, change of interest etc. have no bearing on the way dispositions function.

As Budd rightly notes, I am hoping, wishing, expecting, thinking, intending, desiring etc. depending on the state I take myself to be in-- on the COS that I express. Thinking and intending are S2 dispositions which can only be expressed by reflexive S1 muscle contractions, especially those of speech.

W never devoted as much time to emotions as he did to dispositions so there is less substance to chapter 7. He notes that typically the object and cause are the same—i.e., they are causally self-referential (or self reflexive as Searle now prefers)—a concept further developed by S. If one looks at my table, it is clear emotions have much more in common with the fast, true-only automatisms of S1 than with the slow, true or false thinking of S2, but of course S1 feeds S2 and in turn is often fed by it.

Budd’s summary is a fitting end to the book (p165). “The repudiation of the model of ‘object and designation’ for everyday psychological words—the denial that the picture of the inner process provides a correct representation of the grammar of such words, is not the only reason for Wittgenstein’s hostility to the use of introspection in the philosophy of psychology. But it is its ultimate foundation.”

Now let us take another dose of Searle.

"But you cannot explain a physical system such as a typewriter or a brain by identifying a pattern which it shares with its computational simulation, because the existence of the pattern does not explain how the system actually works as a physical system. ...In sum, the fact that the attribution of syntax identifies no further causal powers is fatal to the claim that programs provide causal explanations of cognition..."

There is just a physical mechanism, the brain, with its various real physical and physical/mental causal levels of description." Searle Philosophy in a New Century (PNC) p101-103

"In short, the sense of 'information processing' that is used in cognitive science is at much too high a level of abstraction to capture the concrete biological reality of intrinsic intentionality...We are blinded to this difference by the fact that the same sentence 'I see a car coming toward me,' can be used to record both the visual intentionality and the output of the computational model of vision...in the sense of 'information' used in cognitive science, it is simply false to say that the brain is an information processing device." Searle PNC p104-105

"The intentional state represents its conditions of satisfaction...people erroneously suppose that every mental representation must be consciously thought...but the notion of a representation as I am using it is a functional and not an ontological notion. Anything that has conditions of satisfaction, that can succeed or fail in a way that is characteristic of intentionality, is by definition a representation of its conditions of satisfaction...we can analyze the structure of the intentionality of social phenomena by analyzing their conditions of satisfaction." Searle MSW p28-32

And another shot of Wittgenstein.

"Philosophy simply puts everything before us and neither explains nor deduces anything...One might give the name 'philosophy' to what is possible before all new discoveries and inventions." PI 126

"The more narrowly we examine actual language, the sharper becomes the conflict between it and our requirement. (For the crystalline purity of logic was, of course, not a result of investigation: it was a requirement.)"PI 107

"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

A major theme in all discussion of human behavior is the need to separate the genetically programmed automatisms from the effects of culture. All study of higher order behavior is an effort to tease apart not only fast S1 and slow S2 thinking (e.g., perceptions and other automatisms vs. dispositions), but the logical extensions of S2 into culture.

Searle's work as a whole provides a stunning description of higher order S2 social behavior due to the recent evolution of genes for dispositional psychology, while the later W shows how it is based on true- only unconscious axioms of S1 which evolved into conscious dispositional propositional thinking of S2.

One thing to keep in mind is that philosophy has no practical impact whatsoever except to clear up confusions about how language is being used in particular cases. Like various 'physical theories' but unlike other cartoon views of life (religious, political, psychological, sociological, anthropological), it is too cerebral and esoteric to be grasped by more than a tiny fringe and it is so unrealistic that even its adherents totally ignore it in their everyday life. Likewise with other academic 'theories of life' such as the Standard Social Science Model widely shared by sociology, anthropology, pop psychology, history and literature. However, religions big and small, political movements, and sometimes economics often generate or embrace already existing cartoons that ignore physics and biology (human nature), posit forces terrestrial or cosmic that reinforce our superstitions (EP defaults), and help to lay waste to the earth (the real purpose of nearly every social practice and institution, which are there to facilitate replication of genes and consumption of resources). The point is to realize that these are on a continuum with philosophical cartoons and have the same source (our evolved psychology). All of us could be said to generate/absorb various cartoon views of

life when young and only a few ever grow out of them.

Also note that, as W remarked long ago, the prefix "meta" is unnecessary and confusing in most (maybe all) contexts, so for 'metacognition' anywhere substitute 'cognition' or 'thinking', since thinking about what we or others believe or know is thinking like any other and does not have to be seen as 'mindreading' (Understanding of Agency or UA in my terminology) either. In S's terms, the COS are the test of what is being thought and they are identical for 'it's raining', 'I believe it's raining', 'I believe I believe it's raining' and 'he believes it's raining' (likewise for 'knows', wishes, judges, understands, etc.), namely that it's raining. This is the critical fact to keep in mind regarding 'metacognition' and 'mindreading' of dispositions ('propositional attitudes').

Now for a few extracts from my review of Carruthers' (C) 'The Opacity of Mind' (2013) which is replete with the classical confusions dressed up as science. It was the subject of a precis in Brain and Behavioral Sciences (BBS) that is not to be missed.

One of the responses in BBS was by Dennett (who shares most of C's illusions), who seems to find these ideas quite good, except that C should eliminate the use of 'I' since it assumes the existence of a higher self (the aim being hard reduction of S2 to S1). Of course the very act of writing, reading and all the language and concepts of anything whatsoever presuppose self, consciousness and will (as S often notes), so such an account would be just a cartoon of life without any value whatsoever, which one could say of most philosophical and many 'scientific' disquisitions on behavior. The W/S framework has long noted that the first person point of view is not eliminable or reducible to a 3rd person one, but this is no problem for the cartoon view of life. Likewise with the description of brain function or behavior as 'computational', 'information processing' etc., -- all well debunked countless times by W/S, Hutto, Read, Hacker and many others. Worst of all is the crucial but utterly unclear "representation", for which I think S's use as a condition of satisfaction (COS) is by far the best. That is, the 'representation' of 'I think it's raining' is the COS that it's raining.

Saddest of all is that C (like Dennett and Searle) thinks he is an expert on W, having studied him early in his career and decided that the private language argument is to be rejected as 'behaviorism'! W famously rejected behaviorism and much of his work is devoted to describing why it cannot serve as a description of behavior. "Are you not really a behaviourist in disguise? Aren't you at bottom really saying that everything except human behavior is a fiction? If I do speak of a fiction, then it is of a *grammatical fiction*." (PI p307) And one can also point to *real* behaviorism in C in its modern 'computationalist' form. W/S insist on the indispensability of the first person point of view while C apologizes to D in the BBS article for using "I" or "self".

Hutto has shown the vast gulf between W and Dennett (D) which will serve to characterize C as well, since I take D and C (along with the Churchland's and many others) to be on the same page. S is one of many who have deconstructed D in various writings and these can all be read in opposition to C. And let us recall that W sticks to examples of language in action, and once one gets the point he is mostly very easy to follow, while C is captivated by 'theorizing' (i.e., chaining numerous sentences with no clear COS) and rarely bothers with specific language games, preferring experiments and observations that are quite difficult to interpret in any definitive way (see the BBS responses), and which in any case have no relevance to higher level descriptions of behavior (e.g., exactly how do they fit into the Intentionality Table). One book he praises as definitive (Memory and the Computational Brain) presents the brain as a computational information processor—a sophomoric view thoroughly and repeatedly annihilated by S and others, including W in the 1930's. In the last decade I have read thousands of pages by and about W and it is quite clear that C does not have a clue. In this he joins a long line of distinguished philosophers whose reading of W was fruitless—Russell, Quine, Dummett, Kripke, Dennett, Putnam, Chomsky etc.(though Putnam began to see the light later). They just cannot grasp the message that most philosophy is grammatical jokes and impossible vignettes—a cartoon view of life.

Books like 'The Opacity of Mind' that attempt to bridge two sciences or two levels of description are really two books and not one. There is the description (not explanation, as W made clear) of our language and nonverbal behavior and then the experiments of cognitive psychology. "The existence of the experimental method makes us think we have the means of solving the problems that trouble us; though problem and method pass one another by."(W PI p232), C

et al are enthralled by science and just assume that it is a great advance to wed high level descriptive psychology to neuroscience and experimental psychology, but W/S and many others have shown this is a mistake. Far from making the description of behavior scientific and clear, it makes it incoherent. And it must have been by the grace of God that Locke, Kant, Nietzsche, Hume, Wittgenstein, Searle et al were able to give such memorable accounts of behavior without any experimental science whatsoever. Of course like politicians, philosophers rarely admit mistakes or shut up, so this will go on and on for reasons W diagnosed perfectly. The bottom line has to be what is useful and what makes sense in our everyday life. I suggest the philosophical views of CDC (Carruthers, Dennett, Churchland), as opposed to those of W/S, are not useful and their ultimate conclusions that will, self and consciousness are illusions make no sense at all—i.e., they are meaningless, having no clear COS. Whether the CDC comments on cognitive science have any heuristic value remains to be determined.

This book (like a huge body of other writing) tries to discount the HOT of other animals and to reduce behavior to brain functions (to absorb psychology into physiology). The philosophy is a disaster but, provided one first reads the many criticisms in the BBS, the commentary on recent psychology and physiology may be of interest. Like Dennett, Churchland and so many others often do, C does not reveal his real gems til the end, when we are told that self, will, consciousness are illusions (supposedly in the normal senses of this words). Dennett had to be unmasked by S, Hutto et al for explaining away these ‘superstitions’ (i.e., doing the usual philosophical move of not explaining at all and in fact not even *describing*) but amazingly C admits it at the beginning, though of course he thinks he is showing us these words do not mean what we think and that his cartoon use is the valid one.

One should also see Bennett and Hacker’s criticisms of cognitive science in ‘Philosophical Foundations of Neuroscience’ (2003) and their debate with S and Dennett in ‘Neuroscience and Philosophy’ (2009—and don’t miss the final essay by Daniel Robinson). It is also well explored in Hacker’s three recent books on “Human Nature”.

There have long been books on chemical physics and physical chemistry but there is no sign that the two will merge (nor is it a coherent idea) nor that chemistry will absorb biochemistry nor it in turn will absorb physiology or genetics, nor that biology will disappear nor that it will eliminate psychology, sociology, etc. This is not due to the ‘youth’ of these disciplines but to the fact that they are different levels of description with entirely different concepts, data and explanatory mechanisms. But physics envy is powerful and we just cannot resist the ‘precision’ of physics, math, information, and computation vs the vagueness of higher levels. It ‘must’ be possible. Reductionism thrives in spite of the incomprehensibility of quantum mechanics, uncertainty, wave/particles, live/dead cats, quantum entanglement, and the incompleteness and randomness of math (Godel/Chaitin—see my full review of Yanofsky’s ‘The Outer Limits of Reason’ and the excerpts here) and its irresistible pull tells us it is due to EP defaults. Again a breath of badly needed fresh air from W: “For the crystalline purity of logic was, of course, not a result of investigation: it was a requirement.” PI p107. It is hard to resist throwing down most books on behavior and rereading W and S. Just jump from anything trying to ‘explain’ higher order behavior to e.g. these quotes from PI
http://topologicalmedialab.net/xinwei/classes/readings/Wittgenstein/pi_94-138_239-309.html.

It is clear to me after reading ten thousand pages of philosophy in the last decade that the attempt to do higher level descriptive psychology of this kind, where ordinary language morphs into special uses both deliberately and inadvertently, is essentially impossible (i.e., the *normal* situation in philosophy and other behavioral disciplines). Using special jargon words (e.g., intensionality, realism etc.) does not work either as there are no philosophy police to enforce a narrow definition and the arguments on what they mean are interminable. Hacker is good but his writing so precious and dense it’s often painful. Searle is very good but requires some effort to embrace his terminology and makes some egregious mistakes, while W is hands down the clearest and most insightful, once you grasp what he is doing, and nobody has ever been able to emulate him. His TLP remains the ultimate statement of the mechanical reductionist view of life, but he later saw his mistake and diagnosed and cured the ‘cartoon disease’, but few get the point and most simply ignore him and biology as well, and so there are tens of thousands of books and millions of articles and most religious and political organizations (and until recently most of economics) and almost all people with cartoon views of life. But the world is not a cartoon, so a great tragedy is being played out as the cartoon views of life collide with reality and universal blindness and selfishness bring about the collapse of civilization.

It seems quite obvious to me (as it was to W) that the mechanical view of mind exists for the same reason as all basic behavior—it is the default operation of our EP which seeks explanations in terms of what we can deliberately think

through slowly, rather than in the automated S1, of which we mostly remain oblivious.

However, it is true that most of behavior is mechanical and that The Phenomenological Illusion is of vastly greater reach than Searle describes. It is most striking to me when driving a car on the freeway and suddenly snapping back to S2 awareness startled to realize I have just driven for several minutes with no conscious awareness at all. On reflection, this automatism can be seen to account for almost all of our behavior with just minimal supervision and awareness from S2. I am writing this page and have to think about what to say, but then it just flows out into my hands which type it and by and large it's a surprise to me except when I think of changing a specific sentence. And you read it giving commands to your body to sit still and look at this part of the page but the words just flow into you and some kind of understanding and memory happen but unless you concentrate on a sentence there is only a vague sense of doing anything. A soccer player runs down the field and kicks the ball and thousands of nerve impulses and muscle contractions deftly coordinated with eye movements, and feedback from proprioceptive and balance organs have occurred, but there is only a vague feeling of control and high level awareness of the results. S2 is the Chief of Police who sits in his office while S1 has thousands of officers doing the actual work according to laws that he mostly does not even know. Reading, writing or soccer are voluntary acts A2 seen from above but composed of thousands of automatic acts A1 seen from below. Much of contemporary behavioral science is concerned with these automatisms.

It is a good idea to read at least Chapter 6 of Searle's PNC, "The Phenomenological Illusion" (TPI). It is clear as crystal that TPI is due to obliviousness to the automatisms of S1 and to taking the slow conscious thinking of S2 as not only primary but as all there is. This is classic Blank Slate blindness. It is also clear that W showed this some 60 years earlier and gave the reason for it in the primacy of the true-only unconscious automatic axiomatic network of our innate System 1 which is the source of the Inner. Very roughly, regarding 'observer independent' features of the world as S1 or The Inner, and 'observer dependent' features as S2 or The Outer should prove very revealing. As Searle notes, the Phenomenologists have the ontology exactly backwards, but of course so does almost everyone due to the defaults of their EP.

Another excellent work on W that deserves close study is Johnston's 'Wittgenstein: Rethinking the Inner' (1993). He notes that some will object that if our reports and memories are really untestable they would have no value but "This objection misses the whole point of W's argument, for it assumes that what actually happened, and what the individual says happened, are two distinct things. As we have seen, however, the grammar of psychological statements means that the latter constitutes the criteria for the former. If we see someone with a concentrated expression on her face and want to know 'what is going on inside her', then her sincerely telling us that she is trying to work out the answer to a complicated sum tells us exactly what we want to know. The question of whether, despite her sincerity, her statement might be an inaccurate description of what she is (or was) doing does not arise. The source of confusion here is the failure to recognize that psychological concepts have a different grammar from that of concepts used to describe outer events. What makes the inner seem so mysterious is the misguided attempt to understand one concept in terms of another. In fact our concept of the Inner, what we mean when we talk of 'what was going on inside her' is linked not to mysterious inner processes, but to the account which the individual offers of her experience...As processes or events, what goes on inside the individual is of no interest, or rather is of a purely medical or scientific interest" (p13-14).

"W's attack on the notion of inner processes does not imply that only the Outer matters, on the contrary; by bringing out the true nature of utterances, he underlines the fact that we aren't just interested in behavior. We don't just want to know that the person's body was in such and such a position and that her features arranged in such and such a way. Rather we are interested in her account of what lay behind this behavior..." (p16-17)

In laying out W's reasoning on the impossibility of private rules or a private language, he notes that "The real problem however is not simply that she fails to lay down rules, but that in principle she could not do so...The point is that without publicly checkable procedures, she could not distinguish between following the rule and merely thinking she is following the rule."

On p55 Johnston makes the point with respect to vision (which has been made many times by W and S in this and other contexts) that the discussion of the Outer is entirely dependent for its very intelligibility on the unchallengeable nature of our direct first person experience of the Inner. The System 2 sceptical doubts concerning mind, will, senses,

world, cannot get a foothold without the true-only certainties of System 1 and the certainty that you are reading these words now is the basis for judgment, not a thing that can itself be judged. This mistake is one of the most basic and common in all philosophy.

On p81 he makes the point that the impossibility, in the normal case, of checking your statements concerning your dispositions (often but confusingly called ‘propositional attitudes’) such as what you thought or are feeling, far from being a defect of our psychology, is exactly what gives these statements interest. “I am tired” tells us how you are feeling rather than giving us another bit of data about the Outer such as your slow movements or the shadows under your eyes.

Johnston then does an excellent job of explaining W’s debunking of the idea that meaning or understanding (and all dispositions) are experiences that accompany speech. As W pointed out, just consider the case where you think you understand, and then find out you did not, to see the irrelevance of any inner experience to meaning, understanding, thinking, believing, knowing etc. The experience which counts is the awareness of the public language game we participate in. Similar considerations dissolve the problem of the ‘lightning speed of thought’. “The key is to recognize that thinking is not a process or a succession of experiences but an aspect of the lives of conscious beings. What corresponds to the lightning speed of thought is the individual’s ability to explain at any point what she is doing or saying.” (p86). And as W says “Or, if one calls the beginning and the end of the sentence the beginning and end of the thought, then it is not clear whether one should say of the experience of thinking that it is uniform during this time or whether it is a process like speaking the sentence itself” (RPP2p237).

Again: “The individuals account of what she thought has the same grammar as her account of what she intended and of what she meant. What we are interested in is the account of the past she is inclined to give and the assumption that she will be able to give an account is part of what is involved in seeing her as conscious” (p 91). That is, all these disposition verbs are part of our conscious, voluntary S2 psychology.

In “The Complexity of the Inner”, he notes that it is ironic that our best way to communicate the Inner is to refer to the Outer but I would say it is both natural and unavoidable. Since there is no private language and no telepathy, we can only contract muscles and by far the most efficient and deep communication is by contracting oral muscles (speech). As W commented in several contexts, it is in plays (or now in TV and films) that we see language (thought) in its purest form.

Dispositions like intending continue as long as we don’t change or forget them and thus lack a precise duration as well as levels of intensity and the content is a decision and so is not a precise mental state, so in all these respects they are quite different from S1 perceptions, memories and reflexive responses like S1 emotions.

The difference between S1 and S2 (as I put it- this was not a terminology available to J or W) also is seen in the asymmetry of the disposition verbs, with the first person use of ‘I believe’ etc., being (in the normal case of sincere utterance) true-only sentences vs the third person use ‘he believes’ etc., being true or false evidence-based propositions. One cannot say “I believe it is raining and it isn’t” but other tenses such as “I believed it was raining and it wasn’t” or the third person “He believes it is raining and it isn’t” are OK. As J says: “The general issue at the heart of the problem here is whether the individual can observe her own dispositions...The key to clarifying this paradox is to note that the individuals description of her own state of mind is also indirectly the description of a state of affairs...In other words, someone who says she believes P is thereby committed to asserting P itself...The reason therefor that the individual cannot observe her belief is that by adopting a neutral or evaluatory stance towards it, she undermines it. Someone who said “I believe it’s raining but it isn’t” would thereby undermine her own assertion. As W notes, there can be no first person equivalent of the third person use of the verb for the same reason that a verb meaning to believe falsely would lack a first person present indicative...the two propositions are not independent, for ‘the assertion that *this* is going on *inside* me asserts: *this* is going on *outside* me’ (RPP1 p490)” (p154-56). Though not commented on by W or J, the fact that children never make such mistakes as “I want the candy but I don’t believe I want it” etc., shows that such constructions are built into our grammar (into our genes) and not cultural add-ons.

He then looks at this from another viewpoint by citing W “What would be the point of my drawing conclusions from my own words to my behavior, when in any case I know what I believe? And what is the manifestation of my knowing what I believe? Is it not manifested precisely in this—that I do not infer my behaviour from my words? That is the fact.”

(RPP1 p744). Another way to say this is that S1 is the axiomatic true-only basis for cognition, and as the non-propositional substrate for determining truth and falsity, cannot be intelligibly judged.

He ends the chapter with important comments on the variability within the LG's (within our psychology) and I suggest it be read carefully.

Johnston continues the discussion in "The Inner/Outer Picture" much of which is summed up in his quote from W. "The inner is hidden from us means that it is hidden from us in a sense that it is not hidden from *him*. And it is not hidden from the owner in the sense that *he gives expression to it*, and we, under certain conditions, believe his expression and there error has no place. And this asymmetry in the game is expressed in the sentence that the Inner is hidden from other people." (LWPP2 p36). J goes on: "The problem is not that inner is hidden but that the language game it involves is very different from those where we normally talk about knowledge." And then he enters into one of W's major themes throughout his life—the difference between man and machine. "But with a human being the assumption is that it is *impossible* to gain an insight into the mechanism. Thus indeterminacy is postulated...I believe unpredictability must be an essential characteristic of the Inner. As also is the endless diversity of expressions." (RPP2 p645 and LWPP2 p65). Again W probes the difference between animals and computers.

J notes that the uncertainties in our LG's are not defects but critical to our humanity. Again W: "[What matters is] not that the evidence makes the feeling (and so the Inner) *merely* probable, but that we treat *this* as *evidence* for something important, that we base a judgement on this involved sort of evidence, and so that such evidence has a special importance in our lives and is made prominent by a concept." (Z p554).

J sees three aspects of this uncertainty as the lack of fixed criteria or fine shades of meaning, the absence of rigid determination of the consequences of inner states and the lack of fixed relationships between our concepts and experience. W:"One can't say what the essential observable consequences of an inner state are. When, for example, he really is pleased, what is then to be expected of him, and what not? There are of course such characteristic consequences, but they can't be described in the same way as reactions which characterize the state of a physical object." (LWPP2 p90). J "Here her inner state is not something we cannot know because we cannot penetrate the veil of the Outer. Rather there is nothing determinate to know."(p195).

In his final chapter he notes that our LG's are not likely to change regardless of scientific progress. "Although it is conceivable that the study of brain activity might turn out to be a more reliable predictor of human behavior, the sort of understanding of human action it gave would not be the same as that involved in the language game on intentions. Whatever the value of the scientists discovery, it could not be said to have revealed what intentions really are." (p213).

This indeterminateness leads to the notion that correlation of brain states with dispositions seems unlikely. "The difficulty here is that the notion of one thought is a highly artificial concept. How many thoughts are there in the Tractatus? And when the basic idea for it struck W, was that one thought or a rash of them? The notion of intentions creates similar problems...These subsequent statements can all be seen as amplifications or explanations of the original thought, but how are we to suppose this relates to the brain state? Are we to imagine that it too will contain the answer to every possible question about the thought? ..we would have to allow that two significantly different thoughts are correlated with the same brain state...words may in one sense be interchangeable and in another sense not. This creates problems for the attempt to correlate brain states and thoughts...two thoughts may be the same in one sense and different in another...Thus the notion of one thought is a fragile and artificial one and for that reason it is hard to see what sense it could make to talk of a one to one correlation with brain states." (p218-219). That is, the same thought (COS) "it's raining" expresses an infinite number of brain states in one or many people. Likewise the 'same' brain state might express different thoughts (COS) in different contexts.

Likewise, W denies that memory consists of traces in the nervous system. "Here the postulated trace is like the inner clock, for we no more infer what happened from a trace than we consult an inner clock to guess the time." He then notes an example from W (RPP1 p908) of a man jotting marks while he reads and who cannot repeat the text without the marks but they don't relate to the text by rules..."The text would not be *stored up* in the jottings. And why should it be stored up in our nervous system?" and also "...nothing seems more plausible to me than that people will some

day come to the definite opinion that there is no copy in either the physiological or the nervous systems which corresponds to a particular thought or a particular idea of memory" (LWPP1 p504). This implies that there can be psychological regularities to which no physiological regularities correspond; and as W provocatively adds 'If this upsets our concepts of causality, then it is high time they were upset.' (RPP1 p905)...'Why should not the initial and the terminal states of a system be connected by a natural law which does not cover the intermediary state? (RPP1 p909)...[It is quite likely that] there is no process in the brain correlated with associating or with thinking, so that it would be impossible to read off thought processes from brain processes...Why should this order, so to speak, not proceed out of chaos?...as it were, causelessly; and there is no reason why this should not really hold for our thoughts, and hence for our talking and writing.'(RPP1 p903)...But must there be a physiological explanation here? Why don't we just leave explaining alone?-but you would never talk like that if you were examining the behavior of a machine! – Well who says that a living creature, an animal body, is a machine in this sense?" (RPPI p918)(p 220- 21).

Of course one can take these comments variously, but one way is that W anticipates the rise of chaos theory, embodied mind and self organization in biology. Since uncertainty, chaos and unpredictability are standard doctrine now, from subatomic to molecular scale, and in planetary dynamics (weather etc.,) and cosmology, why should the brain be an exception? The only detailed comments on these remarks I have seen are in a recent paper by Daniele Moyal-Sharrock (DMS).

It is quite striking that although W's observations are fundamental to all study of behavior—linguistics, philosophy, psychology, history, anthropology, politics, sociology, and art, he is not even mentioned in most books and articles, with even the exceptions having little to say, and most of that distorted or flat wrong. There is a flurry of recent interest, at least in philosophy, and possibly this preposterous situation will change, but probably not much.

The discussion of the logical (psychological) difference between the S1 causes and the S2 reasons in Chapter 7 of Hacker's recent book 'Human Nature' (2011), especially p226-32, is critical for any student of behavior. It is a nearly universal delusion that "cause" is a precise logically exact term while "reason" is not but W exposed this many times. Of course the same issue arises with all scientific and mathematical concepts. And of course one must keep constantly in mind that 'action', 'condition', 'satisfaction', 'intention', and even 'and', 'or', 'prior', 'true' etc. are all complex language games able to trip us up as W so beautifully described in BBB in the early 30's.

Searle make many interesting remarks in one of his most recent books 'Thinking About the Real World' (TARW)(2013),and I seem to have written the only review, so I will discuss it in detail here.

On p21 of TARW we again run into what I regard as the most glaring flaw in S's work and one that should have been obviated long ago had he only read the later W and his commentators more carefully. He refers to free will as an "assumption" that we may have to give up! It is crystal clear from W that will, self, world, and all the phenomena of our lives are the basis for judging-the axiomatic bedrock of our behavior and there is no possibility of judging them. Can we "assume" we have two hands or live on the surface of the earth or that Madonna is a singer etc.? Perhaps this huge mistake is connected with his blending of true only S1 and propositional S2 which I have noted. Amazing that he can get nearly everything else right and stumble on this!

On p22 and elsewhere he uses the notion of unconscious intentionality, which he first discussed in his 1991 paper in Phil. Issues, noting that these are the sorts of things that could become conscious (e.g., dreams). W was I think the first to comment on this noting that if you can't speak of unconscious thoughts you can't speak of conscious ones either (BBB). Here and throughout his work it is unfortunate that he does not use the S1,S2 concepts as it makes it so much easier to keep things straight and he still finds it necessary to indulge in very un-Wittgensteinian jargon. E.g., "Once you have manipulable syntactical elements, you can detach intentionality from its immediate causes in the form of perceptions and memories, in a way that it is not possible to make detachments of unsyntactically structured representational elements." (p31) just says that with language came the dispositional intentionality of S2 where conscious thought and reason became possible.

Regarding reasons and desires (p39) see elsewhere here and my reviews of his other works.

S's continued reference to dispositions as mental states and his reference to mental states as representations

(actually ‘presentations’ here) with COS, is (in my view) counterproductive. On p25 e.g., it seems he wants to say that the apple we see is the COS of the CSR –(Causally Self Reflexive--i.e., cause is built in) perception of the apple and the reflexive unconscious scratching of an itch has the same status (i.e., a COS) as the deliberate planned movement of the arm. Thus the mental states of S1 are to be included with the actions of S2 as COS. Though I accept most of S’s ontology and epistemology I don’t see the advantage of this, but I have the greatest respect for him so I will work on it. I have noted his tendency (normal for others but a flaw in Searle) to mix S1 and S2 which he does on p29 where he seems to be referring to beliefs as mental states. It seems to me quite basic and clear since W’s BBB in the 30’s that S2 are not mental states in anything like the sense of S1.

The paragraph beginning “Because” on p25 is discussing the true-only unconscious percepts, memories and reflexive acts of S1—i.e., our axiomatic EP. As noted, one can read Hutto and Myin’s book ‘Radicalizing Enactivism: Basic Minds Without Content’ (2012) for a very different recent account of the nonrepresentational or enactive nature of S1.

The table of intentionality on p26 updates one he has used for decades and which I have used as the basis for my extended table above.

Nearly half a century ago S wrote “How to derive ought from is” which was a revolutionary advance in our understanding of behavior. He has continued to develop the naturalistic description of behavior and on p39 he shows how ethics originates in our innate social behavior and language. A basic concept is the Desire Independent Reasons for Action (DIRA) which is explained in his various books. For an outline see my reviews of his MSW and other works. He tends to use the proximate reasons of S2 (i.e., dispositional psychology and culture) to frame his analysis but as with all behavior I regard it as superficial unless it includes the ultimate causes in S1 and so I break his DIRA into DIRA1 and DIRA2. This enables the description in terms of the unconscious mechanisms of reciprocal altruism and inclusive fitness. Thus I would restate the last sentence on p39 “...people are asked to override their natural inclinations by making ethical considerations prevail” as “...people are compelled to override their immediate personal benefits to secure long term genetic benefits via reciprocal altruism and inclusive fitness.”

S’s obliviousness (which he shares with most philosophers) to the modern two systems framework and to the full implications of W’s “radical” epistemology as stated most dramatically in his last work ‘On Certainty’, is most unfortunate (as I have noted in many reviews). It was W who did the first and best job of describing the two systems (though nobody else has noticed) and OC represents a major event in intellectual history. Not only is S unaware of the fact that his framework is a straightforward continuation of W, but everyone else is too, which accounts for the lack of any significant reference to W in this book. As usual one also notes no apparent acquaintance with EP, which can enlighten all discussions of behavior by providing the real ultimate evolutionary and biological explanations rather than the superficial proximate cultural ones.

Thus S’s discussion of the two ways to describe sensations (‘experiences’) on p202 is in my view vastly clearer if one realizes that seeing red or feeling pain is automatic true-only S1, but as soon as we attend to it consciously (ca. 500 msec or more) it becomes ‘seeing as’ and a propositional (true or false) S2 function that can be expressed publicly in language (and other bodily muscle contractions as well). Thus the S1 ‘experience’ that is identical with red or the pain vs the S2 ‘experience’ of red or pain, once we begin to reflect on it, normally are blended together into one ‘experience’. For me by far the best place to get an understanding of these issues is still in W’s writings beginning with the BBB and ending with OC. Nobody else has ever described the subtleties of the language games with such clarity. One must keep constantly in mind the vagueness and multiple meanings of ‘mistake’, ‘true’, ‘experience’, ‘understand’, ‘know’, ‘see’, ‘same’ etc., but only W was able to do it—even S stumbles frequently. And it is not a trivial issue—unless one can clearly restate all of p202 separating the true-only non-judgeable S1 from the propositional S2 then nothing about behavior can be said without confusion. And of course very often (i.e., normally) words are used without a clear meaning—one has to specify how ‘true’ or ‘follows from’ or ‘see’ is to be used in *this* context and W is the only one I know of who consistently gets this right.

Again on p203-206, the discussion of intrinsically intentional automatic causal dispositional only makes sense to me because I look at it as just another way to describe S1 states which provide the raw material for deliberate conscious S2 dispositional which, from a biological evolutionary point of view (and what other can there be?) has

to be the case. Thus, his comment on p212 is right on the money— the ultimate explanation (or as W insists the *description*) can only be a naturalized one which describes how mind, will, self and intention work and cannot meaningfully eliminate them as ‘real’ phenomena. Recall S’s famous review of Dennett’s ‘Consciousness Explained’ entitled “Consciousness explained away”. And this makes it all the more bizarre that S should repeatedly state that we don’t know for sure if we have free will and that we have to ‘postulate’ a self (p218-219).

Also I once again think S is on the wrong track (p214) when he suggests that the confusions are due to historical mistakes in philosophy such as dualism, idealism, materialism, epiphenomenalism etc., rather than in universal susceptibility to the defaults of our psychology—‘The Phenomenological Illusion’ (TPI) as he has termed it, and bewitchment by language as beautifully described by W. As he notes, “The neurobiological processes and the mental phenomena are the same event, described at different levels” and “How can conscious intentions cause bodily movement?...How can the hammer move the nail in virtue of being solid? ...If you analyze what solidity is causally...if you analyze what intention-in-action is causally, you see analogously there is no philosophical problem left over.”

I would translate his comment (p220) “A speaker can use an expression to refer only if in the utterance of the referring expressions the speaker introduces a condition that the object referred to satisfies; and reference is achieved in virtue of the satisfaction of that condition.” as “Meaning is achieved by stating a publicly verifiable condition of satisfaction (truth condition).” “I think it is raining” is true if it is raining and false otherwise.

Also I would state “The heart of my argument is that our linguistic practices, as commonly understood, presuppose a reality that exists independently of our representations.” (p223) as “Our life shows a world that does not depend on our existence and cannot be intelligibly challenged.”

Time for some more quotes and a discussion of his recent book of reprints ‘Philosophy in a New Century’ (2008) and as elsewhere I will repeat some comments to place them in a different context.

“Could a machine process cause a thought process? The answer is: yes. Indeed only a machine process can cause a thought process, and ‘computation’ does not name a machine process; it names a process that can be, and typically is, *implemented* on a machine.” Searle PNC p73

“...the characterization of a process as computational is a characterization of a physical system from outside; and the identification of the process as computational does not identify an intrinsic feature of the physics, it is essentially an observer relative characterization.” Searle PNC p95

“The Chinese Room Argument showed that semantics is not intrinsic to syntax. I am now making the separate and different point that syntax is not intrinsic to physics.” Searle PNC p94

“The attempt to eliminate the homunculus fallacy through recursive decomposition fails, because the only way to get the syntax intrinsic to the physics is to put a homunculus in the physics.” Searle PNC p97

“But you cannot explain a physical system such as a typewriter or a brain by identifying a pattern which it shares with its computational simulation, because the existence of the pattern does not explain how the system actually works as a physical system. ...In sum, the fact that the attribution of syntax identifies no further causal powers is fatal to the claim that programs provide causal explanations of cognition... There is just a physical mechanism, the brain, with its various real physical and physical/mental causal levels of description.” Searle PNC p101-103

“In short, the sense of ‘information processing’ that is used in cognitive science is at much too high a level of abstraction to capture the concrete biological reality of intrinsic intentionality...We are blinded to this difference by the fact that the same sentence ‘I see a car coming toward me,’ can be used to record both the visual intentionality and the output of the computational model of vision...in the sense of ‘information’ used in cognitive science, it is simply false to say that the brain is an information processing device.” Searle PNC p104-105

“Can there be reasons for action which are binding on a rational agent just in virtue of the nature of the fact reported in the reason statement, and independently of the agent’s desires, values, attitudes and evaluations?...The real

paradox of the traditional discussion is that it tries to pose Hume's guillotine, the rigid fact-value distinction, in a vocabulary, the use of which already presupposes the falsity of the distinction." Searle PNC p165-171

"...all status functions and hence all of institutional reality, with the exception of language, are created by speech acts that have the logical form of Declarations...the forms of the status function in question are almost invariably matters of deontic powers...to recognize something as a right, duty, obligation, requirement and so on is to recognize a reason for action...these deontic structures make possible desire-independent reasons for action...The general point is very clear: the creation of the general field of desire-based reasons for action presupposed the acceptance of a system of desire-independent reasons for action." Searle PNC p34-49

"Some of the most important logical features of intentionality are beyond the reach of phenomenology because they have no immediate phenomenological reality... Because the creation of meaningfulness out of meaninglessness is not consciously experienced...it does not exist...This is... the phenomenological illusion." Searle PNC p115-117

"Consciousness is causally reducible to brain processes...and consciousness has no causal powers of its own in addition to the causal powers of the underlying neurobiology...But causal reducibility does not lead to ontological reducibility...consciousness only exists *as experienced*...and therefore it cannot be reduced to something that has a third person ontology, something that exists independently of experiences." Searle PNC 155-6

"...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." Searle PNC p193

Though S does not say and seems to be largely unaware, the bulk of his work follows directly from that of W, even though he often criticizes him. To say that Searle has carried on W's work is not to say 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 voicing some variant or extension of what W said (as they must if they are both giving correct descriptions of behavior). I find most of S foreshadowed in W, including versions of the famous Chinese room argument against Strong AI and related issues which are the subjects of Chaps 3-5. Incidentally, if the Chinese Room interests you then you should read Victor Rodych's excellent, but virtually unknown, supplement on the CR--"Searle Freed of Every Flaw". Rodych has also written a series of superb papers on W's philosophy of mathematics --i.e., the EP (Evolutionary Psychology) of the axiomatic System 1 ability of counting up to 3, as extended into the endless System 2 SLG's (Secondary Language Games) of math.

W's insights into the psychology of math provide an excellent entry into intentionality. I will also note that nobody who promotes Strong AI, the multifarious versions of behaviorism, computer functionalism, CTM (Computational Theory of Mind) and Dynamic Systems Theory (DST), seems to be aware that W's Tractatus can be viewed as the most striking and powerful statement of their viewpoint ever penned (i.e., behavior (thinking) as the logical processing of facts--i.e., information processing). Of course later (but before the digital computer was a gleam in Turing's eye) W described in great detail why these were incoherent descriptions of mind that must be replaced by psychology (or you can say this is all he did for the rest of his life). S however makes little reference to W's prescient statement of mind as mechanism, and his destruction of it in his later work.

Since W, S has become the principal deconstructor of these mechanical views of behavior, and perhaps the most important descriptive psychologist (philosopher), but does not realize how completely W anticipated him nor, by and large, do others (but see the many papers and books of Proudfoot and Copeland on W, Turing and AI). S's work is vastly easier to follow than W's, and though there is some jargon, it is mostly spectacularly clear if you approach it from the right direction. See my articles for more details.

Like W, Searle is regarded as the best standup philosopher of his time and his written work is solid as a rock and groundbreaking throughout. However his failure to take the later W seriously enough leads to some mistakes and confusions. On p7 of PNC he twice notes that our certainty about basic facts is due to the overwhelming weight of reason supporting our claims, but as Coliva, DMS et al have noted, W showed definitively in 'On Certainty' that there

is no possibility of doubting the true-only axiomatic structure of our System 1 perceptions, memories and thoughts, since it is the basis for judgment and cannot itself be judged. In the first sentence on p8 he tells us that certainty is revisable, but this kind of ‘certainty’, which we might call Certainty2, is the result of extending our axiomatic and nonrevisable certainty (Certainty1) via experience and is utterly different as it is propositional (true or false). This is of course a classic example of the “battle against the bewitchment of our intelligence by language” which W demonstrated over and over again. One word-- two (or many) distinct uses.

On p10 he chastises W for his antipathy to theorizing but as I noted above, ‘theorizing’ is another language game (LG) and there is a vast gulf between a general description of behavior with few well worked out examples and one that emerges from a large number of such that is not subject to many counterexamples. Evolution in its early days was a theory with limited clear examples but soon became just a summary of a vast body of examples and a theory in a quite different sense. Likewise with a theory one might make as a summary of a thousand pages of W’s examples and one resulting from ten pages.

Again on p12, ‘consciousness’ is the result of automated System 1 functioning that is ‘subjective’ in several quite different senses, and not, in the normal case, a matter of evidence but a true-only understanding in our own case and a true-only perception in the case of others.

As I read p13 I thought: “Can I be feeling excruciating pain and go on as if nothing is wrong?” No!—this would not be ‘pain’ in the same sense. “The inner experience stands in need of outer criteria”(W) and Searle seems to miss this. See W or Johnston.

As I read the next few pages I felt that W has a much better grasp of the mind/language connection, as he regards them as synonymous in many contexts, and his work is a brilliant exposition of mind as exemplified in numerous perspicuous examples of language use. As quoted above, "Now if it is not the causal connections which we are concerned with, then the activities of the mind lie open before us." And as explained above I feel the questions with which S ends section 3 are largely answered by considering W’s OC from the standpoint of the two systems. Likewise for section 6 on the philosophy of science. Rodoch has done an article on Popper vs W which I thought superb at the time but I will have to reread it to make sure.

Finally, on p25, one can deny that any revision of our concepts (language games) of causation or free will are necessary or even possible. You can read just about any page of W and much of DMS, Coliva, Hacker etc. for the reasons. It’s one thing to say bizarre things about the world using examples from quantum mechanics, uncertainty etc., but it is another to say anything relevant to our normal use of words.

On p31, 36 etc., we again encounter the incessant problems (in philosophy and life) of identical words glossing over the huge differences in LG’s of ‘belief’, ‘seeing’ etc., as applied to S1 which is composed of mental states in the present only, and S2 which is not. The rest of the chapter summarizes his work on ‘social glue’ which, from an EP, Wittgensteinian perspective, is the automatic fast actions of S1 producing the slow dispositions of S2 which are inexorably and universally expanded during personal development into a wide array of automatic unconscious deontic relationships with others, and arbitrarily into cultural variations on them.

Chapters 3 to 5 contain his well-known arguments against the mechanical view of mind which seem to me definitive. I have read whole books of responses to them and I agree with S that they all miss the very simple logical (psychological) points he makes (and which, by and large, W made half a century earlier before there were computers). To put it in my terms, S1 is composed of unconscious, fast, physical, causal, automatic, non-propositional, true-only mental states, while slow S2 can only coherently be described in terms of reasons for actions that are more or less conscious dispositions to behavior (potential actions) that are or can become propositional (T or F). Computers and the rest of nature have only derived (ascribed) intentionality that is dependent on our perspective while higher animals have primary intentionality that is independent of perspective. As S and W appreciate, the great irony is that these materialistic or mechanical reductions of psychology masquerade as cutting edge science, but in fact they are utterly anti-scientific. Philosophy (descriptive psychology) and cognitive psychology (freed of superstition) are becoming hand in glove and it is Hofstadter, Dennett, Carruthers, Kurzweil etc., who are left out in the cold.

Page 62 nicely summarizes one of his arguments but p63 shows that he has still not quite let go of the blank slate as he tries to explain trends in society in terms of the cultural extensions of S2. As he does in many other places in his writings, he gives cultural, historical reasons for behaviorism, but it seems quite obvious to me (as it was to W) that the mechanical view of mind exists for the same reason as nearly all behavior—it is the default operation of our EP which seeks explanations in terms of what we can deliberately think through slowly, rather than in the automated S1, of which we mostly remain oblivious. As noted above, Searle has described this as TPI. Again on p65 I find W's description of our axiomatic inherited psychology and its extensions in his OC and other works to be deeper than S's (or anyone's), and so we are NOT 'confident' that dogs are conscious, but rather it is not open to doubt. See the earlier section of this article dealing with OC and DMS.

Chapter 5 nicely demolishes CTM, LOT etc., noting that 'computation', 'information', 'syntax', 'algorithm', 'logic', 'program', etc., are observer relative (i.e., psychological) terms and have no physical or mathematical meaning(COS) in this psychological sense, but of course there are other senses they have been given recently as science has developed. Again, people are bewitched by the use of the same word into ignoring that vast difference in its use (meaning). These comments are all extensions of classic Wittgenstein and in this connection I recommend Hutto's and Read's papers too.

Chapter 6 "The Phenomenological Illusion" (TPI) is by far my favorite, and, while demolishing that field, it shows both his supreme logical abilities and his failure to grasp the full power of both the later W, and the great heuristic value of recent psychological research on the two selves. It is clear as crystal that TPI is due to obliviousness to the automatisms of S1 and to taking the slow conscious thinking of S2 as not only primary but as all there is. This is classic Blank Slate blindness. It is clear that W showed this some 60 years earlier and also gave the reason for it in the primacy of the true-only unconscious automatic axiomatic network of our innate System 1. Like so many others, Searle dances all around it but never quite gets there. Very roughly, regarding 'observer independent' features of the world as S1 and 'observer dependent' features as S2 should prove very revealing. As S notes, Heidegger and the others have the ontology exactly backwards, but of course so does almost everyone due to the defaults of their EP.

But the really important thing is that S does not take the next step to realizing that TPI is not just a failing of a few philosophers, but a universal blindness to our EP that is itself built into EP. He actually states this in almost these words at one point, but if he really got it how could he fail to point out its immense implications for the world. With rare exceptions (e.g., the Jaina Tirthankaras going back over 5000 years to the beginnings of the Indus civilization and most recently and remarkably Osho, Buddha, Jesus, Bodhidharma, Da Free John etc.), we are all meat puppets stumbling through life on our genetically programmed mission to destroy the earth. Our almost total preoccupation with using the second self S2 personality to indulge the infantile gratifications of S1 is creating Hell On Earth. As with all organisms, it's only about reproduction and accumulating resources therefor. Yes, much noise about Global Warming and the imminent collapse of industrial civilization in the next century, but nothing is likely to stop it. S1 writes the play and S2 acts it out. Dick and Jane just want to play house—this is mommy and this is daddy and this and this and this is baby. Perhaps one could say that TPI is that we are humans and not just another primate.

Chapter 7 on the nature of the self is good but nothing really struck me as new. Chapter 8 on property dualism is much more interesting even though mostly a rehash of his previous work. The last of his opening quotes above sums this up, and of course the insistence on the critical nature of first person ontology is totally Wittgensteinian. The only big blunder I see is his blank slate or (cultural) type of explanation on p 158 for the errors of dualism, when in my view it is clearly another instance of TPI—a mistake which he (and nearly everyone else) has made many times, and repeats on p177 etc., in the otherwise superb Chapter 9. The genes program S1 which (mostly) pulls the strings (contracts the muscles) of the meat puppets via S2. End of story. Again he needs to read my comments or those of DMS on W's OC so he changes the "good reason to believe" at the bottom of p171 and the top of p172 to "knows" (in the true-only sense).

A critical point is made again on p169. "Thus saying something and meaning it involves two conditions of satisfaction. First, the condition of satisfaction that the utterance will be produced, and second, that the utterance itself shall have conditions of satisfaction." One way of regarding this is that the unconscious automatic System 1 activates the higher cortical conscious personality of System 2, bringing about throat muscle contractions which inform others that it sees

the world in certain ways, which commit it to potential actions. A huge advance over prelinguistic or protolinguistic interactions in which only gross muscle movements were able to convey very limited information about intentions and S makes a similar point in Chapter10. The genes program S1 which (mostly) pulls the strings (contracts the muscles) of the meat puppets via S2. End of story. Again he needs to read my comments and those of DMS, Coliva, Andy Hamilton etc., on W's OC so he changes the "good reason to believe" at the bottom of p171 and the top of p172 to "knows" (in the true-only sense).

His last chapter "The Unity of the Proposition" (previously unpublished) would also benefit greatly from reading W's "On Certainty" or DMS's various books and papers, as they make clear the difference between true only *sentences* describing S1 and true or false *propositions* describing S2. This strikes me as a far superior approach to S's taking S1 perceptions as propositional since they only become T or F after one begins thinking about them in S2. However, his point that propositions permit statements of actual or potential truth and falsity, of past and future and fantasy, and thus provide a huge advance over pre or protolinguistic society, is cogent. As he states it "*A proposition is anything at all that can determine a condition of satisfaction...and a condition of satisfaction... is that such and such is the case.*" Or, one needs to add, that might be or might have been or might be imagined to be the case.

Overall, PNC is a good summary of the many substantial advances over Wittgenstein resulting from S's half century of work, but in my view, W still is unequaled once you grasp what he is saying. Ideally they should be read together: Searle for the clear coherent prose and generalizations, illustrated with W's perspicacious examples and brilliant aphorisms. If I were much younger I would write a book doing exactly that.

"So status functions are the glue that hold society together. They are created by collective intentionality and they function by carrying deontic powers...With the important exception of language itself, all of institutional reality and therefor in a sense all of human civilization is created by speech acts that have the logical form of Declarations...all of human institutional reality is created and maintained in existence by (representations that have the same logical form as) Status Function Declarations, including the cases that are not speech acts in the explicit form of Declarations." Searle MSWp11-13

"Beliefs, like statements, have the downward or mind (or word)-to-world direction of fit. And desires and intentions, like orders and promises, have the upward or world-to-mind (or word) direction of fit. Beliefs or perceptions, like statements, are supposed to represent how things are in the world, and in that sense they are supposed to fit the world; they have the mind-to-world direction of fit. The conative- volitional states such as desires, prior intentions and intentions-in-action, like orders and promises, have the world-to-mind direction of fit. They are not supposed to represent how things are but how we would like them to be or how we intend to make them be...In addition to these two faculties, there is a third, imagination, in which the propositional content is not supposed to fit reality in the way that the propositional contents of cognition and volition are supposed to fit...the world-relating commitment is abandoned and we have a propositional content without any commitment that it represent with either direction of fit." Searle MSWp15

"Just as in intentional states we can make a distinction between the type of state ...and the content of the state...so in the theory of language we can make a distinction between the type of speech act it is...and the propositional content...we have the same propositional content with different psychological mode in the case of the intentional states, and different illocutionary force or type in the case of the speech acts. Furthermore, just as my beliefs can be true or false and thus have the mind-to-world direction of fit, so my statements can be true or false and thus have the word-to-world direction of fit. And just as my desires or intentions cannot be true or false but can be in various ways satisfied or unsatisfied, so my orders and promises cannot be true or false but can be in various ways satisfied or unsatisfied—we can think of all the intentional states that have a whole propositional content and a direction of fit as representations of their conditions of satisfaction. A belief represents its truth conditions, a desire represents its fulfillment conditions, an intention represents its carrying out conditions...The intentional state represents its conditions of satisfaction...people erroneously suppose that every mental representation must be consciously thought...but the notion of a representation as I am using it is a functional and not an ontological notion. Anything that has conditions of satisfaction, that can succeed or fail in a way that is characteristic of intentionality, is by definition a representation of its conditions of satisfaction...we can analyze the structure of the intentionality of social phenomena by analyzing their conditions of satisfaction." Searle MSW p28-32

"The first four types of speech acts have exact analogues in intentional states: corresponding to Assertives are beliefs, corresponding to Directives are desires, corresponding to Commissives are intentions and corresponding to Expressives is the whole range of emotions and other intentional states where the Presup fit is taken for granted. *But there is no prelinguistic analog for the Declarations.*

Prelinguistic intentional states cannot create facts in the world by representing those facts as already existing. This remarkable feat requires a language" MSW p69

"Speaker meaning... is the imposition of conditions of satisfaction on conditions of satisfaction. The capacity to do this is a crucial element of human cognitive capacities. It requires the ability to think on two levels at once, in a way that is essential for the use of language. At one level, the speaker intentionally produces a physical utterance, but at another level the utterance represents something. And the same duality infects the symbol itself. At one level it is a physical object like any other. At another level it has a meaning: it represents a type of a state of affairs" MSW p74

"...once you have language, it is inevitable that you will have deontology because there is no way you can make explicit speech acts performed according to the conventions of a language without creating commitments. This is true not just for statements but for all speech acts" MSW p82

This brings up another point that is prominent in W but denied by S, that all we can do is give descriptions and not a theory. S insists he is providing theories but of course "theory" and "description" are language games too and it seems to me S's theory is usually W's description—a rose by any other name.... W's point was that by sticking to perspicacious examples that we all know to be true accounts of our behavior, we avoid the quicksand of theories that try to account for ALL behavior (ALL language games), while S wants to generalize and inevitably goes astray (he gives several examples of his own mistakes in PNC). As S and others endlessly modify their theories to account for the multifarious language games they get closer and closer to describing behavior by way of numerous examples as did W.

The Primary Language Games (PLG's) are the simple automated utterances by our involuntary, System 1, fast thinking, mirror neuron, true only, non-propositional, mental states- our perceptions and memories and reflexive acts ('will') including System 1 Truths and UA1 --Understanding of Agency 1-- and Emotions1- such as joy, love, anger, which can be described causally, while the evolutionarily later Secondary Language Games (SLG's) are expressions or descriptions of voluntary, System 2, slow thinking, mentalizing neurons, testable true or false, propositional, Truth2 and UA2 and Emotions2- joyfulness, loving, hating, the dispositional (and often counterfactual) imagining, supposing, intending, thinking, knowing, believing, etc., which can only be described in terms of reasons (i.e., it's a fact that attempts to describe System 2 in terms of neurochemistry, atomic physics, mathematics, just make no sense--see W for many examples and Searle for good disquisitions on this).

It is not possible to describe the automatisms of System 1 in terms of reasons (e.g., 'I see that as an apple because...') unless you want to give a reason in terms of EP, genetics, physiology, and as W has demonstrated repeatedly it is meaningless to give "explanations" with the proviso that they will make sense in the future--'Nothing is hidden'--they make sense now or never.

A powerful heuristic is to separate behavior and experience into Intentionality 1 and Intentionality 2 (e.g., Thinking 1 and Thinking 2, Emotions 1 and Emotions 2 etc.) and even into Truths 1 (T only axioms) and Truths 2 (empirical extensions or "Theorems" which result from the logical extension of Truths 1). W 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.

The ideas here are already published and nothing will come as a surprise to those who have kept up with Searle's work.

I feel that W has a better grasp of the mind/language connection, as he regards them as synonymous in many contexts, and his work is a brilliant exposition of mind as exemplified in numerous perspicacious examples of

language use. As quoted above, "Now if it is not the causal connections which we are concerned with, then the activities of the mind lie open before us." One can deny that any revision of our concepts (language games) of causation or free will are necessary or even possible. You can read just about any page of W for the reasons. It's one thing to say bizarre things about the world using examples from quantum mechanics, uncertainty etc., but it is another to say anything relevant to our normal use of words.

The deontic structures or 'social glue' are the automatic fast actions of S1 producing the slow dispositions of S2 which are inexorably expanded during personal development into a wide array of automatic unconscious universal cultural deontic relationships with others (S3). Though this is my précis of behavior I expect it fairly describes S's work.

It seems quite obvious to me (as it was to W) that the mechanical view of mind exists for the same reason as nearly all behavior—it is the default operation of our EP which seeks explanations in terms of what we can deliberately think through slowly, rather than in the automated S1, of which we mostly remain oblivious (TPI). I find W's description of our axiomatic inherited psychology and its extensions in his OC and other 3rd period works to be deeper than S's (or anyone's), and so we are NOT 'confident' that dogs are conscious, but rather it is not open to (not possible to) doubt.

Now let us review Searle's brilliant summary of his many years of work on the logical structure of the 'social glue' that holds society together as set forth in his 'Making the Social World' (2010).

A critical notion introduced by S many years ago is Conditions of Satisfaction (COS) on our thoughts (propositions of S2) which W called inclinations or dispositions to act--still called by the inappropriate term 'propositional attitudes' by many. COS are explained by S in many places such as on p169 of PNC: "Thus saying something and meaning it involves two conditions of satisfaction. First, the condition of satisfaction that the utterance will be produced, and second, that the utterance itself shall have conditions of satisfaction." As S states it in PNC, "*A proposition is anything at all that can determine a condition of satisfaction...and a condition of satisfaction... is that such and such is the case.*" Or, one needs to add, that might be or might have been or might be imagined to be the case, as he makes clear in MSW. Regarding intentions, "*In order to be satisfied, the intention itself must function causally in the production of the action.*"(MSWp34).

Most will benefit greatly from reading W's "On Certainty" or "RPP1 and 2" or DMS's two books on OC (see my reviews) as they make clear the difference between true-only sentences describing S1 and true or false propositions describing S2. This strikes me as a far superior approach to S's taking S1 perceptions as propositional (at least in some places in his work) since they can only become T or F (aspectual as S calls them here) after one begins thinking about them in S2. However, his point in PNC that propositions permit statements of actual or potential truth and falsity, of past and future and fantasy, and thus provide a huge advance over pre or protolinguistic society, is cogent.

S often describes the critical need to note the various levels of description of one event so for IA (Intention in Action) "We have different levels of description where one level is constituted by the behavior at the lower level...in addition to the constitutive by way of relation, we also have the causal by means of relation."(p37).

So, recognizing the S1 is only upwardly causal and contentless (lacking representations or information) while S2 has content and is downwardly causal (e.g., see Hutto and Myin's 'Radical Enactivism') I would change the paragraphs from p39 beginning "In sum" and ending on pg 40 with "conditions of satisfaction" as follows.

In sum, perception, memory and reflexive intentions and actions ('will') are caused by the automatic functioning of our S1 true-only axiomatic EP. Via prior intentions and intentions-in-action, we try to match how we desire things to be with how we think they are. We should see that belief, desire (and imagination—desires time shifted and so decoupled from intention) and other S2 propositional dispositions of our slow thinking later evolved second self, are totally dependent upon (have their COS in) the CSR rapid automatic primitive true only reflexive S1. In language and perhaps in neurophysiology there are intermediate or blended cases such as intending (prior intentions) or remembering, where the causal connection with COS (i.e., with S1) is time shifted, as they represent the past or the future, unlike S1 which is always in the present. The two systems feed into each other and are often orchestrated by the learned deontic cultural relations seamlessly, so that our normal experience is that we consciously control

everything that we do. This vast arena of cognitive illusions that dominate our life S has described as 'The Phenomenological Illusion.'

He ends this amazing chapter by repeating for maybe the 10th time in his writings, what I regard as a very basic mistake that he shares with nearly everyone—the notion that the experience of 'free will' may be 'illusory'. It follows in a very straightforward and inexorable fashion, both from W's 3rd period work and from the observations of contemporary psychology, that 'will', 'self' and 'consciousness' are axiomatic true-only elements of System 1 just like seeing, hearing, etc., and there is no possibility (intelligibility) of demonstrating (of giving sense to) their falsehood. As W made so wonderfully clear numerous times, they are the basis for judgment and so cannot be judged. S understands and uses basically this same argument in other contexts (e.g., skepticism, solipsism) many times, so it is quite surprising he can't see this analogy. He makes this mistake frequently when he says such things as that we have "good evidence" that our dog is a dog etc. The true-only axioms of our psychology are not evidential. Here you have the best descriptive psychologist since W so this is not a stupid mistake.

His summary of deontics on p50 needs translation. Thus "You have to have a prelinguistic form of collective intentionality, on which the linguistic forms are built, and you have to have the collective intentionality of the conversation in order to make the commitment" is much clearer if supplemented with "The prelinguistic axiomatics of S1 underlie the linguistic dispositions of S2 (i.e., our EP) which evolve during our maturation into their cultural manifestations."

Since status function declarations play a central role in deontics it is critical to understand them and so he explains the notion of 'function' that is relevant here. "A function is a cause that serves a purpose...In this sense functions are intentionality-relative and therefore mind dependent...status functions... require... collective imposition and recognition of a status"(p59).

Again I suggest the translation of "The intentionality of language is created by the intrinsic, or mind- independent intentionality of human beings" (p66) as "The linguistic, conscious dispositionality of S2 is generated by the unconscious axiomatic reflexive functions of S1" (p68). That is, one must keep in mind that behavior is programmed by biology.

However I strongly object to his statements on p66-67 and elsewhere in his writings that S1 (i.e., memories, perceptions, reflex acts) has a propositional (i.e., true-false) structure. As I have noted above, and many times in other reviews, it seems crystal clear that W is correct, and it is basic to understanding behavior, that only S2 is propositional and S1 is axiomatic and true-only. They both have COS and Directions of Fit (DOF) because the genetic, axiomatic intentionality of S1 generates that of S2 but if S1 were propositional in the same sense it would mean that skepticism is intelligible, the chaos that was philosophy before W would return and in fact life would not be possible (no this is not a joke). As W showed countless times and biology shows so clearly, life must be based on certainty—automated unconscious rapid reactions. Organisms that always have a doubt and pause to reflect will die.

Contrary to his comments (p70) I cannot imagine a language lacking words for material objects any more than I can imagine a visual system that cannot see them, because it is the first and most basic task of vision to segment the world into objects and so that of language to describe them. Likewise I cannot see any problem with objects being salient in the conscious field nor with sentences being segmented into words. How could it be otherwise for beings with our evolutionary history?

On p72 and elsewhere, it will help to remember that expressions are the primitive reflexive PLG's of S1 while representations are the dispositional SLG's of S2.

Another translation from Philosophese into English is needed for the second paragraph on p79 beginning 'So far' and ending 'heard before'. "We convey meaning by speaking a public language composed of words in sentences with a syntax."

To his questions 4 and 5 on p105 as to the special nature of language and writing, I would answer: 'They are special

because the short wavelength of vibrations of vocal muscles enable much higher bandwidth information transfer than contractions of other muscles and this is on average several orders of magnitude higher for visual information.'

On p106, a general answer to question 2 (How do we get away with it—i.e., why does it work) is EP and S1 and his statement that "My main strategy of exposition in this book is to try to make the familiar seem strange and striking" is of course classic Wittgenstein. His claim on the next page that there is no general answer to why people accept institutions is clearly wrong. They accept them for the same reason they do everything—their EP is the result of inclusive fitness. It facilitated survival and reproduction in the EEA (Environment of Evolutionary Adaptation). Everything about us physically and mentally bottoms out in genetics. All the vague talk here (e.g., p114) about 'extra-linguistic conventions' and 'extra semantical semantics' is in fact referring to EP and especially to the unconscious automatisms of S1 which are the basis for all behavior. Yes, as W said many times, the most familiar is for that reason invisible.

S's suggestion (p115) that language is essential to games is surely mistaken. Totally illiterate deaf-mutes could play cards, soccer and even chess but of course a minimal counting ability would be necessary. I agree (p121) that the ability to pretend and imagine (e.g., the counterfactual or as-if notions involved in time and space shifting) are, in full form, uniquely human abilities and critical to higher order thought. But even here there are many animal precursors (as there must be), such as the posturing of ritual combats and mating dances, the decoration of mating sites by bower birds, the broken wing pretense of mother birds, fake alarm calls of monkeys, 'cleaner' fish that take a bite out of their prey and simulation of hawk and dove strategies (cheaters) in many animals.

More translation is needed for his discussion of rationality (p126 et seq.). Saying that thinking is propositional and deals with true or false 'factitive entities' means that it is a typical S2 disposition which can be tested, as opposed to the true-only automatic cognitive functions of S1.

In 'Free Will, Rationality and Institutional Facts' he updates parts of his classic book 'Rationality in Action' and creates some new terminology for describing the formal apparatus of practical reasons which I do not find felicitous. 'Factitive Entities' do not seem different from dispositions and 'motivator' (desire or obligation), 'effector' (body muscles), 'constitutor' (speech muscles) and 'total reason' (all relevant dispositions) do not, at least here seem to add to clarity (p126-132).

We should do something here that rarely happens in discussions of human behavior and remind ourselves of its biology. Evolution by inclusive fitness has programmed the unconscious rapid reflexive causal actions of S1 which often give rise to the conscious slow thinking of S2 (often modified by the cultural extensions of S3), which produces reasons for action that often result in activation of body and/or speech muscles by S1 causing actions. The general mechanism is via both neurotransmission and by changes in various neuromodulators in targeted areas of the brain. This may seem infelicitous as well, but has the virtue that it is based on fact, and given the complexity of our higher order thought, I don't think a general description is going to get much simpler. The overall cognitive illusion (called by S 'The Phenomenological Illusion') 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 knows this view is not credible.

Again I will repeat some crucial notions. Another idea clarified by S is the Desire Independent Reasons for Action (DIRA). I would translate S's summary of practical reason on p127 of MSW as follows: "We yield to our desires (need to alter brain chemistry), which typically include Desire -Independent Reasons for Action (DIRA--i.e., desires displaced in space and time), which produce dispositions to behavior that commonly result sooner or later in muscle movements that serve our inclusive fitness (increased survival for genes in ourselves and those closely related)." And I would restate his description on p129 of how we carry out DIRA2 as "The resolution of the paradox is that the unconscious DIRA1 serving long term inclusive fitness generate the conscious DIRA2 which often override the short term personal immediate desires." Agents do indeed consciously create the proximate reasons of DIRA2, but these are very restricted extensions of unconscious DIRA1 (the ultimate cause). Obama and the Pope wish to help the poor because it is "right" but the ultimate cause is a change in their brain chemistry that increased the inclusive fitness of their distant ancestors. Evolution by inclusive fitness has programmed the unconscious rapid reflexive causal actions of S1 which often 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 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 S '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.

Thus I would translate his summary of practical reason on p127 as follows: "We yield to our desires (need to alter brain chemistry), which typically include Desire –Independent Reasons for Action (DIRA— i.e., desires displaced in space and time, most often for reciprocal altruism), which produce dispositions to behavior that commonly result sooner or later in muscle movements that serve our inclusive fitness (increased survival for genes in ourselves and those closely related)."

Contrary to S's comment on p128 I think if suitably defined, DIRA are universal in higher animals and not at all unique to humans (think mother hen defending her brood from a fox) if we include the automated prelinguistic reflexes of S1 (i.e., DIRA1), but certainly the higher order DIRA of S2 or DIRA2 that require language are uniquely human. This seems to me an alternative and clearer description of his "explanation" (as W suggested these are much better called 'description') on the bottom of p129 of the paradox of how we can voluntarily carry out DIRA2 (i.e., the S2 desires and their cultural extensions). That is, "The resolution of the paradox is that the recognition of desire-independent reasons can ground the desire and thus cause the desire, even though it is not logically inevitable that they do and not empirically universal that they do" can be translated as "The resolution of the paradox is that the unconscious DIRA1 serving long term inclusive fitness generate the conscious DIRA2 which often override the short term personal immediate desires." Likewise for his discussion of this issue on p130-31—it is EP, RA, IF, S1 (Evolutionary Psychology,, Reciprocal Altruism, Inclusive Fitness, System 1) which ground the dispositions and ensuing actions of S2.

On p140 he asks why we can't get deontics from biology but of course we must get them from biology as there is no other option and the above description shows how this happens. Contrary to his statement, the strongest inclinations DO always prevail (by definition, otherwise it is not the strongest), but deontics works because the innate programming of RA and IF override immediate personal short term desires. His confusion of nature and nurture, of S1 and S2, extends to conclusions 2 and 3 on p143. Agents do indeed create the proximate reasons of DIRA2, but these are not just anything but, with few if any exceptions, very restricted extensions of DIRA1 (the ultimate cause). If he really means to ascribe deontics to our conscious decisions alone then he is prey to 'The Phenomenological Illusion'(TPI) which he so beautifully demolished in his classic paper of that name (see my review of PNC). As I have noted above, there is a huge body of recent research exposing cognitive illusions which comprise our personality. TPI is not merely a harmless philosophical error but a universal obliviousness to our biology which produces the illusion that we control our life and our society and the world and the consequences are almost certain collapse of industrial civilization during the next 150 years.

He notes correctly that human rationality makes no sense without the 'gap' (actually 3 gaps which he has discussed many times). That is, without free will (i.e., choice) in some non-trivial sense it would all be pointless, and he has rightly noted that it is inconceivable that evolution could create and maintain an unnecessary genetically and energetically expensive charade. But, like nearly everyone else, he cannot see his way out and so once again he suggests (p133) that choice may be an illusion. On the contrary, following W, it is quite clear that choice is part of our axiomatic S1 true-only reflexive actions and cannot be questioned without contradiction as S1 is the basis for questioning. You cannot doubt you are reading this page as your awareness of it is the basis for doubting.

Now lets us briefly review Searle's most recent book, 'Seeing Things As They Are' (STATA-2015). See the full review for further comments.

As one expects from any philosophy, we are in deep trouble immediately, for on page 4 we have the terms 'perception' and 'object' as though they were used in some normal sense but we are doing philosophy so we are going to be undulating back and forth between language games have no chance of keeping our day to day games distinct from the various philosophical ones. Again you can read some of Bennett and Hacker's 'Neuroscience and Philosophy' or 'Philosophical Foundations of Neuroscience' to get a feel for this. Sadly like nearly all philosophers, Searle (S) has still not adopted the two systems framework so it's much harder to keep things straight than it needs to

be.

On p6, Believing and Asserting are part of system 2 which is linguistic, deliberative, slow, with no precise time of occurrence and ‘it is raining’ is their public Condition of Satisfaction (COS2) (Wittgenstein’s transitive) —i.e., it is propositional and representational and not a mental state and we can only intelligibly describe it in terms of reasons, while Visual Experience (VisExp) is system 1 and so requires (for intelligibility, for sanity) that it be raining (it’s COS1) and has a determinate time of occurrence, is fast (typically under 500msec), non-testable (Wittgenstein’s true-only), and nonpublic, automatic and not linguistic i.e., not propositional and presentational and only describable in terms of causes of a mental state. In spite of this on p7 after crushing the horrific (but still quite popular) term ‘propositional attitude’, he says that perception has propositional content, but I agree with W that S1 is true-only and hence cannot be propositional in anything like the sense of S2 where propositions are public statements (COS) that are true or false.

On p12 keep in mind that he is describing the automaticity of System 1 (S1), and then he notes that to describe the world we can only repeat the description which W noted as showing the limits of language. The last sentence on to the end of the paragraph middle of p13 needs translating (like most of philosophy!) so for “The subjective experience has a content, which philosophers call an intentional content and the specification of the intentional content is the same as the description of the state of affairs that the intentional content presents you with etc.” I would say ‘Perceptions are System 1 mental states that can only be described in the public language of System 2.’ And when he ends by noting again the equivalence of a description of believing with that of a description of our perception, he is repeating what W noted long ago and which is due to the fact that S1 is nonlinguistic and that describing, believing, knowing, expecting, etc. are all different psychological or intentional modes or language games played with the same words.

On p23 he refers to private ‘experiences’ but words are S2 and describe public events, so what warrants our use of the word for ‘private experiences’ (i.e., S1) can only be their public manifestations (S2) —i.e., language we all use to describe public acts as even for myself I cannot have any way to attach language to something internal. This is of course W’s argument against the possibility of a private language. He also mentions several times that hallucinations of X are the same as seeing X but what can be the test for this except that we are inclined to use the same words? In this case they are the same by definition so this argument rings hollow.

On p35 top he again correctly attacks the use of ‘propositional attitude’ which is not an attitude to a sentence but an attitude (disposition) to its public COS, i.e., to the fact or truthmaker. Then he says “For example, if I see a man in front of me, the content is that there is a man in front of me. The object is the man himself. If I am having a corresponding hallucination, the perceptual experience has a content, but no object. The content can be exactly the same in the two cases, but the presence of a content does not imply the presence of an object.” The way I see this is that the ‘object’ is normally in the world and creates the mental state (S1) and if we put this in words it becomes S2 with COS2 (i.e., a public truthmaker) and this does entail the public object, but for a hallucination (or direct brain stimulation etc.) the ‘object’ is only the similar mental state resulting from brain activation.

As W showed us, the big mistake is not about understanding perception but about understanding language—all the problems of philosophy proper are exactly the same—failure to look carefully at how the language works in a particular context so as to yield clear COS.

Middle of p61 we see the confusions that arise here and everywhere when we fail to keep S1 and S2 separate. Either we must not refer to representations in S1 or we must at least call them R1 and realize they have no public COS—i.e., no COS2.

On p63 nondetachability only means that it is a caused automatic function of S1 and not a reasoned, voluntary function of S2. This discussion continues onto the next page, but of course is relevant to the whole book and to all of philosophy, and it is so unfortunate that Searle, and nearly all in the behavioral sciences, cannot get into the 21st century and use the two systems terminology which renders so many opaque issues very clear. Likewise with the failure to grasp that it’s always just a matter of whether it’s a scientific issue or a philosophical one and if philosophical then which language game is going to be played and what the COS are in the context in question.

On p64 he says the ‘experience’ is in his head but that is just the issue—as W made so clear there is no private language and as Bennett and Hacker take the whole neuroscience community to task for, in normal use ‘experience’ can only be a public phenomenon for which we share criteria, but what is the test for my having an experience in my head? At the least there is an ambiguity here which will lead to others. Many think these don’t matter, many think they do. Something happens in the brain but that’s a scientific neurophysiological issue and certainly by ‘experience’ or by ‘I saw a rabbit’ one never means the neurophysiology. Clearly this is not a matter for investigation but one of using words intelligibly.

On p65 indexical, nondetachable, and presentational are just more philosophical jargon used instead of System 1 by people who have not adopted the two systems framework for describing behavior (i.e., nearly everyone). Likewise for the following pages if we realize that ‘objects and states of affairs’, ‘visual experiences’, ‘fully determinate’ etc., are just language games where we have to decide what the COS are and that if we just keep in mind the properties of S1 and S2 all of this becomes quite clear and Searle and everyone else could stop ‘struggling to express’ it. Thus (p69) ‘reality is determinate’ only means that perceptions are S1 and so mental states, here and now, automatic, causal, untestable (true-only) etc. while beliefs, like all dispositions are S2 and so not mental states, do not have a definite time, have reasons and not causes, are testable with COS etc.

On p70 he notes that intentions in action of perception (IA1 in my terms) are part of the reflexive acts of S1 (A1 in my terms) which may originate in S2 acts which have become reflexive (S2A in my terminology).

On the bottom of p74 onto p75, 500 msec is often taken as the approximate dividing line between seeing (S1) and seeing as (S2) which means S1 passes the percept to higher cortical centers of S2 where they can be deliberated upon and expressed in language.

On p100-101 the ‘subjective visual field’ is S2 and ‘objective visual field’ is S1 and ‘nothing is seen’ in S2 means we don’t play the language game of seeing in the same sense as for S1 and indeed philosophy and a good chunk of science (e.g., physics) would be different if people realized they were playing language games and not doing science.

On p107 ‘perception is transparent’ because language is S2 and S1 has no language as it’s automatic and reflexive so when saying what I saw or to describe what I saw I can only say “I saw a cat”. Once again W pointed this out long ago as showing the limits of language.

P110 middle needs to be translated from SearleSpeak into TwoSystemsSpeak so that “Because presentational visual intentionality is a subspecies of representation, and because all representation is under aspects, the visual presentations will always present their conditions of satisfaction under some aspects and not others.” becomes “Because the percepts of S1 present their data to S2, which has public COS, we can speak of S1 as though it also has public COS”. On p111 the ‘condition’ refers to the public COS of S2, i.e., the events which make the statement true or false and ‘lower order’ and ‘higher order’ refer to S1 and S2.

On p112 the basic action and basic perception are isomorphic because S1 feeds its data to S2, which can only generate actions by feeding back to S1 to contract muscles, and lower level perception and higher level perception can only be described in the same terms due to there being only one language to describe S1 and S2. On p117 bottom it would be much less mysterious if he would adopt the two systems framework so that instead of “internal connection” with conditions of satisfaction (my COS1), a perception would just be noted as the automaticity of S1 which causes a mental state.

On p120 the point is that ‘causal chains’ have no explanatory power because the language games of ‘cause’ only make sense in S1 or other non-psychological phenomena of nature, whereas semantics is S2 and we can only intelligibly speak of reasons for higher order human behavior. One way this manifests is ‘meaning is not in the head’ which enmeshes us in other language games.

On p121 to say it’s essential to a perception (S1) that it has COS1 (‘the experience’) merely describes the conditions of the language game of perception—it is an automatic causal mental state.

On p 122 I think “First, for something to be red in the ontologically objective world is for it to be capable of causing ontologically subjective visual experiences like this.” is not coherent as there is nothing to which we can refer ‘this’ so it should be stated as “ First, for something to be red is just for it to incline me to call it ‘red’ ”—as usual, the jargon does not help at all and the rest of the paragraph is unnecessary as well.

On p123 the ‘background disposition” is the automatic, causal, mental state of S1 and as I, in agreement with W, DMS and others have said many times these cannot intelligibly be called ‘presuppositions’ as they are unconsciously activated ‘hinges’ that are the basis for presuppositions.

Section VII and VIII (or the whole book or most of higher order behavior or most of philosophy in the narrow sense) could be titled “The language games describing the interaction of the causal, automatic, nonlinguistic transient mental states of S1 with the reasoned, conscious, persistent linguistic thinking of S2” and the background is not suppositional nor can it be taken for granted but it is our axiomatic true-only psychology (the ‘hinges” or ‘ways of acting’ of W’s ‘On Certainty’) that underlie all suppositions. As is evident from my comments I think the whole section, lacking the two systems framework and W’s insights in OC is confused in supposing it presents an “explanation” of perception where it can at best only describe how the language of perception works in various contexts. We can only describe how the word ‘red’ is used and that’s the end of it and for the last sentence of this section we might say that for something to be a ‘red apple’ is only for it to normally result in the same words being used by everyone.

Speaking of hinges, it is sad and a bit strange that Searle has not incorporated what many (e.g., DMS an eminent contemporary philosopher and leading W expert) regard as maybe the greatest discovery in modern philosophy—W’s revolutionizing of epistemology in his ‘On Certainty’ as nobody can do philosophy or psychology in the old way anymore without looking antiquated. And though Searle almost entirely ignored ‘On Certainty’ his whole career, in 2009 (i.e., 6 years before publication of this book) he spoke at a symposium on it held by the British Wittgenstein Society and hosted by DMS, so he is certainly aware of the view that has revolutionized the very topics he is discussing here. I don’t think this meeting was published, but his lecture can be downloaded from Vimeo. It seems to be a case of an old dog who can’t learn new tricks. Though he has probably pioneered more new territory in the descriptive psychology of higher order behavior than anyone since Wittgenstein, once he has learned a path he tends to stay on it, as we all do. Like everyone, he uses the French word *repertoire* when there is an easier to pronounce and spell English word ‘repertory’ and the awkward ‘he/she’ or reverse sexist ‘she’ when one can always use ‘they’ or ‘them’. In spite of their higher intelligence and education, academics are sheep too.

Section IX to the end of the chapter shows again the very opaque and awkward language games one is forced into when trying to describe (not explain as W made clear) the properties of S1 (i.e., to play the language games used to describe ‘primary qualities’) and how these feed data into S2 (i.e., secondary qualities’), which then has to feed back to S1 to generate actions. It also shows the errors one commits by failing to grasp Wittgenstein’s unique view of ‘hinge epistemology’ presented in “On Certainty”. To show how much clearer this is with the dual system terminology I would have to rewrite the whole chapter (and much of the book). Since I have rewritten sections here several times, and often in my reviews of Searle’s other books, I will only give a couple brief examples.

The sentence on p129 “Reality is not dependent on experience, but conversely. The concept of the reality in question already involves the causal capacity to produce certain sorts of experiences. So the reason that these experiences present red objects is that the very fact of being a red object involves a capacity to produce this sort of experience. Being a straight line involves the capacity to produce this other sort of experience. The upshot is that organisms cannot have these experiences without it seeming to them that they are seeing a red object or a straight line, and that “seeming to them” marks the intrinsic intentionality of the perceptual experience.” Can be rendered as “S1 provides the input for S2 and the way we use the word ‘red’ mandates it’s COS in each context, so using these words in a particular way is what it means to see red. In the normal case, it does not ‘seem’ to us that we see red, we just see red and we use ‘seem to” to describe cases where we are in doubt.”

On p130 “Our question now is: Is there an essential connection between the character of things in the world and the character of our experience?” can be translated as “Are our public language games (S2) useful (consistent) in the description of perception (S1)?”

The first paragraph of Section X ‘The Backward Road’ is perhaps the most important one in the book, as it is critical for all of philosophy to understand that there cannot be a precise 1:1 connection between or reduction of S2 to S1 due to the many ways of describing in language a given event (mental state, i.e., percept, memory etc.). Hence the apparent impossibility of capturing behavior in algorithms (the hopelessness of ‘strong AI’) or of extrapolating from a given neuronal pattern in the brain to the multitudinous acts (language games) we use to describe it. The ‘Backward Road’ is the language (COS) of S2 used to describe S1. Again I think his failure to use the two systems framework renders this quite confusing if not opaque. Of course he shares this failing with nearly everyone. Searle has commented on this before and so have others (e.g., Hacker) but it seems to have escaped most philosophers and almost all scientists.

Again Searle misses the point in Sect XI and X12 –we do not and cannot ‘seem to see’ red or ‘seem’ to have a memory or ‘assume’ a relation between the experience and the word, but as with all the perceptions and memories that constitute the innate axiomatic true-only mental states of System 1, we just have the experience and “it” only becomes ‘red’ etc., when described in public language with this word in this context by System 2. We know it’s red as this is a hinge—an axiom of our psychology that is our automatic action and is the *basis* for assumptions or judgements or presuppositions and cannot intelligibly be judged, tested or altered. As W pointed out so many times, a mistake in S1 is of an entirely different kind than one in S2. No explanations are possible—we can only describe how it works and so there is no possibility of getting a nontrivial “explanation” of our psychology. As he always has, Searle makes the common and fatal mistake of thinking he understands behavior (language) better than Wittgenstein. After a decade reading W, S and many others I find that W’s ‘perspicuous examples’, aphorisms and trialogues usually provide greater illumination than the wordy disquisitions of anyone else.

“We may not advance any kind of theory, There must not be anything hypothetical in our considerations. We must do away with all *explanation*, and description alone must take its place.” (PI 109).

On p135, one way to describe perception is that the event or object causes a pattern of neuronal activation (mental state) whose self-reflexive COS1 is that we see a red rose in front of us, and in appropriate contexts for a normal English speaking person, this leads us to activate muscle contractions which produces the words ‘I see a red rose’ whose COS2 is that there is a red rose there. Or simply, S1 produces S2 in appropriate contexts. So on p136 we can say S1 leads to S2 which we express in this context by the word ‘smooth’ which describes (but never ‘explains’) how the language game of ‘smooth’ works in this context and we can translate “For basic actions and basic perceptions the intentional content is internally related to the conditions of satisfaction, even though it is characterized non-intentionalistically, because being the feature F perceived consists in the ability to cause experiences of that type. And in the case of action, experiences of that type consists in their ability to cause that sort of bodily movement.” as “Basic perceptions (S1) can lead automatically (internally) to basic reflex actions (A1) (i.e., burning a finger leads to withdrawing the arm) which only then enters awareness so that it can be reflected upon and described in language (S2).

On p150, the point is that inferring, like knowing, judging, thinking, is an S2 disposition expressed in language with public COS that are informational (true or false) while percepts are non-informational (see my review of Hutto and Myin’s book) automated responses of S1 and there is no meaningful way to play a language game of inferring in S1. Trees and everything we see is S1 for a few hundred msec or so and then normally enter S2 where they get language attached (aspectual shape or seeing as).

Regarding p151 et seq., it is sad that Searle, as part of his lack of attention to the later W, never seems to refer to what is probably the most penetrating analysis of color words in W’s “Remarks on Colour”, which is missing from nearly every discussion of the subject I have seen. The only issue is how do we play the game with color words and with ‘same’, ‘different’, ‘experience’ etc. in *this* public linguistic context (true or false statements—COS2) because there is no language and no meaning in a private one (S1). So it does not matter (except to neuroscientists) what happens in the mental states of S1 but only what we *say* about them when they enter S2. It’s clear as day that all 7.6 billion on earth have a slightly different pattern of neural activation every time they see red and that there is no possibility for a perfect correlation between S1 and S2. As I noted above it is absolutely critical for every philosopher and scientist to get this clear.

Regarding the brain in a vat (p157), insofar as we disrupt or eliminate the normal relations of S1 and S2, we lose the language games of intentionality. The same applies to intelligent machines and W described this situation definitively over 80 years ago.

"Only of a living being and what resembles (behaves like) a living human being can one say: it has sensations; it sees; is blind; hears; is deaf; is conscious or unconscious." (PI 281)

Chapter 6: yes disjunctivism (like nearly all philosophical theses) is incoherent and the fact that this and other absurdities flourish in his own department and even among some of his former students who got top marks in his Philosophy of Mind classes shows perhaps that, like most, he stopped too soon in his Wittgenstein studies.

On p188, yes veridical seeing and 'knowing' (i.e., K1) are the same since S1 is true-only- i.e., it is the fast, axiomatic, causally self-reflexive, automatic mental states which can only be described with the slow, deliberative public language games of S2.

On p204 -5, representation is always under an aspect since, like thinking, knowing etc., it is a disposition of S2 with public COS, which is infinitely variable.

Once again I think the use of the two systems framework greatly simplifies the discussion. If one insists to use 'representation' for 'presentations' of S1 then one should say that R1 have COS1 which are transient neurophysiological mental states, and so totally different from R2, which have COS2 (aspectual shapes) that are public, linguistically expressible states of affairs, and the notion of unconscious mental states is illegitimate since such language games lack any clear sense.

Sadly, on p211 Searle for maybe the tenth time in his writings (and endlessly in his lectures) says that 'free will' may be illusory, but as W from the 30's on noted, one cannot coherently deny or judge the 'hinges' such as our having choice, nor that we see, hear, sleep, have hands etc., as these words express the true-only axioms of our psychology, our automatic behaviors that are the basis for action

On p219 bottom and 222 top—it was W in his work, culminating in 'On Certainty' who pointed out that behavior cannot have an evidentiary basis and that its foundation is our animal certainty or way of behaving that is the basis of doubt and certainty and cannot be doubted (the hinges of S1). He also noted many times that a 'mistake' in our basic perceptions (S1) which has no public COS and cannot be tested (unlike those of S2), if it is major or persists, leads not to further testing but to insanity.

Phenomenalism p227 top: See my extensive comments on Searle's excellent essay 'The Phenomenological Illusion' in my review of 'Philosophy in a New Century'. There is not even any warrant for referring to one's private experiences as 'phenomena', 'seeing' or anything else. As W famously showed us, language can only be a public testable activity (no private language). And on p230 the problem is not that the 'theory' 'seems' to be inadequate, but that (like most if not all philosophical theories) it is incoherent. It uses language that has no clear COS. As W insisted all we can do is describe—it is the scientists who can make theories.

The bottom line is that this is classic Searle—superb and probably at least as good as anyone else can produce, but lacking understanding of the fundamental insights of the later Wittgenstein, and with no grasp of the two systems of thought framework, which could have made it brilliant.

Finally, permit me to again note that W posed an interesting resolution to some of these 'puzzles' by suggesting that some 'mental phenomena' (i.e., words for dispositions leading to public acts) may originate in chaotic processes in the brain and that there is not anything corresponding to a memory trace nor to a single brain process identifiable as a single intention or action--that the causal chain ends without a trace, and that 'cause', 'event' and 'time' cease to be applicable (useful—having clear COS). Subsequently, many have made similar suggestions based on physics and the sciences of complexity and chaos.

