Talking Monkeys

Philosophy, Psychology, Science, Religion and Politics on a Doomed Planet--Articles and Reviews 2006-2017

Michael Starks

Logical Structure of Rationality

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/Word
Cause Originates From****	World	World	World	World	Mind	Mind	Mind	Mind
Causes Changes In*****	None	Mind	Mind	Mind	None	World	World	World
Causally Self Reflexive******	No	Yes	Yes	Yes	No	Yes	Yes	Yes
True or False (Testable)	Yes	T only	T only	T only	Yes	Yes	Yes	Yes
Public Conditions of Satisfaction	Yes	Yes/No	Yes/No	No	Yes/No	Yes	No	Yes
Describe a Mental State	No	Yes	Yes	Yes	No	No	Yes/No	Yes
Evolutionary Priority	5	4	2,3	1	5	3	2	2
Voluntary Content	Yes	No	No	No	No	Yes	Yes	Yes
Voluntary Initiation	Yes/No	No	Yes	No	Yes/No	Yes	Yes	Yes
Cognitive System *******	2	1	2/1	1	2 / 1	2	1	2
Change Intensity	No	Yes	Yes	Yes	Yes	No	No	No

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PREFACE

"He who understands baboon would do more towards metaphysics than Locke" Charles Darwin 1838 Notebook M

This collection of articles was written over the last 10 years and edited to bring them up to date (2017). The copyright page has the date of the edition and new editions will be noted there as I edit old articles or add new ones. All the articles are about human behavior (as are all articles by anyone about anything), and so about the limitations of having a recent monkey ancestry (8 million years or much less depending on viewpoint) and manifest words and deeds within the framework of our innate psychology as presented in the table of intentionality. As famous evolutionist Richard Leakey says, it is critical to keep in mind not that we evolved from apes, but that in every important way, we are apes. If everyone was given a real understanding of this (i.e., of human ecology and psychology to actually give them some control over themselves), maybe civilization would have a chance. As things are however the leaders of society have no more grasp of things than their constituents and so collapse into anarchy is inevitable.

The first group of articles attempts to give some insight into how we behave that is reasonably free of the theoretical delusions that are universal. In the next group, I show how these insights apply by reviewing some books in philosophy and psychology. Next I review books on science and religion and finally provide reviews and articles showing how understanding of both science and philosophy gives insight into the tragic delusions destroying the world. People believe that society can be saved by science, religion and politics, so I provide some suggestions as to why this is unlikely via short articles and reviews of recent books by well-known writers.

It is critical to understand why we behave as we do and so the first section presents articles that try to describe (not explain as Wittgenstein insisted) behavior. I start with a brief review of the logical structure of rationality, which provides some heuristics for the description of language (mind, rationality, personality) and gives some suggestions as to how this relates to the evolution of social behavior. This centers around the two writers I have found the most important in this regard, Ludwig Wittgenstein and John Searle, whose ideas I combine and extend within the dual system (two

systems of thought) framework that has proven so useful in recent thinking and reasoning research. As I note, there is in my view essentially complete overlap between philosophy, in the strict sense of the enduring questions that concern the academic discipline, and the descriptive psychology of higher order thought (behavior). Once one has grasped Wittgenstein's insight that there is only the issue of how the language game is to be played, one determines the Conditions of Satisfaction (what makes a statement true or satisfied etc.) and that is the end of the discussion.

Since philosophical problems are the result of our innate psychology, or as Wittgenstein put it, due to the lack of perspicuity of language, they run throughout human discourse and behavior, so there is endless need for philosophical analysis, not only in the 'human sciences' of philosophy, sociology, anthropology, political science, psychology, history, literature, religion, etc., but in the 'hard sciences' of physics, mathematics, and biology. It is universal to mix the language game questions with the real scientific ones as to what the empirical facts are. Scientism is ever present and the master has laid it before us long ago, i.e., Wittgenstein (hereafter W) beginning with the Blue and Brown Books in the early 1930's.

"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)

The key to everything about us is biology, and it is obliviousness to it that leads millions of smart educated people like Obama, Chomsky, Clinton and the Pope to espouse suicidal utopian ideals that inexorably lead straight to Hell on Earth. As W noted, it is what is always before our eyes that is the hardest to see. We live in the world of conscious deliberative linguistic System 2, but it is unconscious, automatic reflexive System 1 that rules. This is the source of the universal blindness described by Searle's The Phenomenological Illusion (TPI), Pinker's Blank Slate and Tooby and Cosmides' Standard Social Science Model.

The astute may wonder why we cannot see System 1 at work, but it is clearly counterproductive for an animal to be thinking about or second guessing every action, and in any case, there is no time for the slow, massively integrated System 2 to be involved in the constant stream of split second 'decisions' we must make. As W noted, our 'thoughts' (T1 or the 'thoughts' of System 1) must lead directly to actions.

It is my contention that the table of intentionality (rationality, mind, thought, language, personality etc.) that features prominently here describes more or less accurately, or at least serves as an heuristic for, how we think and behave, and so it encompasses not merely philosophy and psychology, but everything else (history, literature, mathematics, politics etc.). Note especially that intentionality and rationality as I (along with Searle, Wittgenstein and others) view it, includes both conscious deliberative System 2 and unconscious automated System 1 actions or reflexes.

Thus, all the articles, like all behavior, are intimately connected if one knows how to look at them. As I note, The Phenomenological Illusion (oblivion to our automated System 1) is universal and extends not merely throughout philosophy but throughout life. I am sure that Chomsky, Obama, Zuckerberg and the Pope would be incredulous if told that they suffer from the same problem as Hegel, Husserl and Heidegger, (or that that they differ only in degree from drug and sex addicts in being motivated by stimulation of their frontal cortices by the delivery of dopamine (and over 100 other chemicals) via the ventral tegmentum and the nucleus accumbens), but it's clearly true. While the phenomenologists only wasted a lot of people's time, they are wasting the earth and their descendant's futures.

Many of the articles describe the 'digital delusions', which confuse the language games of System 2 with the automatisms of System 1, and so cannot distinguish biological machines (i.e., people) from other kinds of machines (i.e., computers). The 'reductionist' claim is that one can 'explain' behavior at a 'lower' level, but what actually happens is that one does not explain human behavior but a 'stand in' for it. Hence the title of Searle's classic review of Dennett's book ("Consciousness Explained")— "Consciousness Explained Away". In most contexts 'reduction' of higher level emergent behavior to brain functions, biochemistry, or physics is incoherent. Also for 'reduction' of chemistry or physics, the path is blocked by chaos and uncertainty. Anything can be 'represented' by equations, but when they 'represent' higher order behavior, it is not clear (and cannot be made clear) what the 'results' mean. Reductionist metaphysics is a joke, but most scientists and philosophers lack the appropriate sense of humor.

Other digital delusions are that we will be saved from the pure evil (selfishness) of System 1 by computers/AI/robotics/ nanotech/genetic engineering created by System 2. The No Free Lunch principal tells us there will be serious and possibly fatal consequences. The adventurous may regard this principle as a higher order emergent expression of the Second Law of Thermodynamics. Hi-tech enthusiasts hugely underestimate the problems

resulting from unrestrained motherhood, and of course it is neither profitable nor politically correct (and now with third world supremacism dominant, not even possible) to be honest about it.

The last section describes various versions of the 'altruism delusion' that we are selected for cooperation, and that the euphonious ideals of Democracy, Diversity and Equality will lead us into utopia, if we just manage things correctly (the possibility of politics). Again, the No Free Lunch Principle ought to warn us it cannot be true, and we see throughout history and all over the contemporary world, that without strict controls, selfishness and stupidity gain the upper hand and soon destroy any nation that embraces it. In addition, the monkey mind steeply discounts the future, and so we cooperate in selling our descendant's heritage for temporary comforts, greatly exacerbating the problems.

I describe versions of this delusion (i.e., that we are basically 'friendly' if just given a chance) as it appears in some recent books on sociology/biology/economics. I end with an essay on the great tragedy playing out in America and the world, which can be seen as a direct result of our evolved psychology manifested as the inexorable machinations of System 1. Our psychology, eminently adaptive and eugenic on the plains of Africa from ca. 6 million years ago, when we split from chimpanzees, to ca. 50,000 years ago, when many of our ancestors left Africa (i.e., in the EEA or Environment of Evolutionary Adaptation), is now maladaptive and dysgenic and the source of our Suicidal Utopian Delusions. So, like all discussions of behavior (philosophy, psychology, sociology, biology, anthropology, politics, law, literature, history, economics, soccer strategies, business meetings, etc.), this book is about evolutionary strategies, selfish genes and inclusive fitness (kin selection).

Many accept the delusion that we are selected for cooperation with people generally (group selection or altruism) and not just our immediate relatives (kin selection or inclusive fitness), so I spend some time in the essays of the last section demolishing this fantasy. One thing rarely mentioned by the group selectionists is the fact that, even were 'group selection' possible, selfishness is at least as likely (probably far more likely in most contexts) to be group selected for as altruism. Just try to find examples of true altruism in nature –the fact that we can't (which we know is not possible if we understand evolution) tells us that its apparent presence in humans is an artefact of modern life concealing the facts, and that it can no more be selected for than the tendency to suicide (which in fact it is). One does not really need science or mathematics to grasp this – it is crushingly obvious that an

organism cannot be selected for behavior that decreases the frequency of its own genes in the next generation.

One might also benefit from considering a phenomenon never (in my experience) mentioned by group selectionists -- cancer. No group has as much in common as the (originally) genetically identical cells in our own bodies-a 100 trillion cell clone-- but we are all born with thousands and perhaps millions of cells that have already taken the first step on the path to cancer and generate millions to billions of cancer cells in our life. If we did not die of other things first, we (and perhaps all multicellular organisms) would all die of cancer. Only a massive and hugely complex mechanism built into our genome that represses or derepresses trillions of genes in trillions of cells, and kills and creates billions of cells a second, keeps the majority of us alive long enough to reproduce. One might take this to imply that a just, democratic and enduring society for any kind of entity on any planet in any universe is only a dream, and that no being or power could make it otherwise. It is not only 'the laws' of physics that are universal and inescapable, or perhaps we should say that inclusive fitness is a law of physics.

The great mystic Osho said that the separation of God and Heaven from Earth and Humankind was the most evil idea that ever entered the Human mind. In the 20th century an even more evil notion arose—that humans are born with rights, rather than having to earn privileges. Thus, every day the population increases by 200,000, who must be provided with resources to grow and space to live, and who soon produce another 200,000 etc. And one almost never hears it noted that what they receive must be taken from those already alive. Their lives diminish those already here in both major obvious and countless subtle ways. Every new baby destroys the earth from the moment of conception. There cannot be human rights without human wrongs. It cannot be more obvious, but one will never see the streets full of protesters against motherhood.

America and the world are in the process of collapse from excessive population growth, most of it for the last century and now all of it due to 3rd world people. Consumption of resources and the addition of 4 billion more ca. 2100 will collapse industrial civilization and bring about starvation, disease, violence and war on a staggering scale. The earth loses about 2% of it's topsoil every year, so as it nears 2100, most of it's food growing capacity will be gone. Billions will die and nuclear war is all but certain. In America, this is being hugely accelerated by massive immigration and immigrant reproduction, combined with abuses made possible by democracy. Depraved human nature inexorably turns the dream of democracy and diversity into a

nightmare of crime and poverty. China will continue to overwhelm America and the world, as long as it maintains the dictatorship which limits selfishness. The root cause of collapse is the inability of our innate psychology to adapt to the modern world, which leads people to treat unrelated persons as though they had common interests. This, plus ignorance of basic biology and psychology, leads to the social engineering delusions of the partially educated who control democratic societies. Few understand that if you help one person you harm someone else—there is no free lunch and every single item anyone consumes destroys the earth beyond repair. Consequently, social policies everywhere are unsustainable and one by one all societies without stringent controls on selfishness will collapse into anarchy or dictatorship. Without dramatic and immediate changes, there is no hope for preventing the collapse of America, or any country that follows a democratic system. The popular notions supported by the Democratic Party and Third World Supremacists are that Democracy, Diversity, Equality and Social Justice will produce a Utopia in America and the world, but it is clear as crystal that they unavoidably foster selfishness and divisiveness and are producing collapse. Hence my concluding essay "Suicide by Democracy".

The most basic facts, almost never mentioned, are that there are not enough resources in America or the world to lift a significant percentage of the poor out of poverty and keep them there. Even the attempt to do this is already bankrupting America and destroying the world. The earth's capacity to produce food decreases daily, as does our genetic quality. And now, as always, by far the greatest enemy of the poor is other poor and not the rich.

I had hoped to weld my comments into a unified whole, but I came to realize, as Wittgenstein and AI researchers did, that the mind (roughly the same as language as Wittgenstein showed us) is a motley of disparate pieces evolved for many contexts, and there is no such whole or theory except inclusive fitness, i.e., evolution by natural selection.

Finally, as with my previous writings 3DTV and 3D Movie Technology-Articles 1996-2016 (2017), and Psychoactive Drugs-- Four Classic Texts (1976-1982) 878p (2016), and in all my letters and email and conversations for over 50 years, I have always used 'they' or 'them' instead of 'his/her', 'she/he', or the idiotic reverse sexism of 'she' or 'her', being perhaps the only one in this part of the galaxy to do so. The slavish use of these universally applied egregious vocables is of course intimately connected with the defects in our psychology which generate academic philosophy, democracy and the collapse of industrial civilization, and I leave the further description of these connections as an exercise for the reader.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while my writings of more directly socio-political interest can be found in Suicidal Utopian Delusions in the 21st Century 2nd ed. (2018).

I am aware of many imperfections and limitations of my work and continually revise it, but I took up philosophy and psychology ten years ago at 65, so it is miraculous, and an eloquent testimonial to the power of System 1 automatisms, that I have been able to do anything at all. It was ten years of incessant struggle and I hope readers find it of some use.

vyupzz@gmail.com

WITTGENSTEIN, SEARLE AND THE TWO SYSTEMS OF THOUGHT

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

Michael Starks

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 book 'The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle' (2017). Those interested in my writings with scoio-political relevance may see Suicidal Utopian Delusions in the 21st Century: Philosophy, Human Nature and the Collapse of Civilization --Articles and Reviews 2006-2017' (2017).

"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 Rodych's papers on W's remarks on Godel 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 deploring an unsolvable infinite regress. Why not rather appreciate that Wittgenstein has stopped the regress?" ("Beyond Hacker's Wittgenstein" -(2013))."

It is amazing (and a sign of how deep the divide remains between philosophy and psychology) that (as I have noted many times) in 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 trialogue (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 (0C) 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, nicely explained by DMS and elucidated in his own unique manner by Searle, is that the skeptical view of the world and other minds (and a mountain of other nonsense) cannot get a foothold, as "reality" is the result of involuntary 'fast thinking' axioms and not testable propositions (as I would put it).

It is clear to me that the innate true-only axioms W is occupied with throughout his work, and especially in OC, are equivalent to the fast thinking or System 1 that is at the center of current research (e.g., see Kahneman--"Thinking Fast and Slow", but neither he, nor anyone afaik, has any idea W laid out the framework over 50 years ago), which is involuntary and automatic and which corresponds to the mental 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 and reviews 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 ¾ 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)

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

	Disposition *	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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.

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

INTENTIONS: (I will make X True) Intending.

ACTIONS: (I am making X True) : Acting, Speaking , Reading, Writing, Calculating, Persuading, Showing, Demonstrating, Convincing, Doing Trying, Attempting, Laughing, Playing, Eating, Drinking, Crying, Asserting (Describing, Teaching, Predicting, Reporting), Promising , Making or Using Maps, Books, Drawings, Computer Programs–these are Public and Voluntary and transfer Information to others so they dominate over the Unconscious, Involuntary and Informationless S1 reflexes in explanations of behavior (The Phenomenological Illusion (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 algorithmatized by Rott (1999), Spohn etc.

Intentionality (cognitive or evolutionary psychology) consists of various aspects of behavior which are innately programmed into cognitive modules which create and require consciousness, will and self, and in normal human adults nearly all except perceptions and some memories are purposive, require public acts (e.g., language), and commit us to relationships in order to increase our inclusive fitness (maximum expected utility or Bayesian utility maximization). 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 inclinational verbs such as "I believe" normally describe my ability to predict my probable acts based on knowledge (i.e., S2) but can also seem (in philosophical contexts) to be descriptive of my mental state and so not based on knowledge or information (W and see my review of the book by Hutto and Myin). In the former S1 sense, it does not describe a truth but makes itself true in the act of saying it --i.e., "I believe it's raining" makes itself true. That is, disposition verbs used in first person present tense can be causally self-reflexive--they instantiate themselves but

then they are not testable (i.e., not T or F, not S2). However past or future tense or third person use--"I believed" or "he believes" or "he will believe' contain or can be resolved by information that is true or false, as they describe public acts that are or can become verifiable. Likewise, "I believe it's raining" has no information apart from subsequent actions, even for me, but "I believe it will rain" or "he will think it's raining" are potentially verifiable public acts displaced in spacetime that intend to convey information (or misinformation).

Nonreflective or Nonrational (automatic) words spoken without Prior Intent (which I call S2A—i.e., S2D automated by practice) have been called Words as Deeds by W & then by 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, 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 wholely 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 trialogues 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 scientistic (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 scientistic 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" --Horwich '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 arithmatics harmonizes with an opinion Wittgenstein maintained thoughout 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 Yanofksy'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 apropros 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 ¾ 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 useage (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 is 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 dispositionality 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 in 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), Cet 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 scientist's 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 someday 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 ofS1.

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 dispositionality 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 dispositionality 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. Rodych 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 proto-linguistic 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 is 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 proto-linguistic 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 ofS2.

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 is 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), nontestable (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 an 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 it's 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 consist 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.

Review of Making the Social World by John Searle (2010)

Michael Starks

ABSTRACT

Before commenting in detail on making the Social World (MSW) I will first offer some comments on philosophy (descriptive psychology) and its relationship to contemporary psychological research as exemplified in the works of Searle (S) and Wittgenstein (W), since I feel that this is the best way to place Searle or any commentator on behavior, in proper perspective. It will help greatly to see my reviews of PNC, TLP, PI, OC, TARW and other books by these two geniuses of descriptive psychology.

S makes no reference to W's prescient statement of mind as mechanism in TLP, and his destruction of it in his later work. Since W, S has become the principal deconstructor of these mechanical views of behavior, and 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 reviews of W S and other books for more details.

Overall, MSW 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 for basic psychology once you grasp what he is saying (see my reviews). Ideally, they should be read together: Searle for the clear coherent prose and generalizations on the operation of S2/S3, illustrated with W's perspicacious examples of the operation of S1/S2, and his brilliant aphorisms. If I were much younger I would write a book doing exactly that.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those wishing a contemporary socio-political slant may see Suicidal Utopian Delusions in the 21st Century (2017).

"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

"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)

"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." Wittgenstein 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." Wittgenstein PI 126

"What we are supplying are really remarks on the natural history of man, not curiosities; however, but rather observations on facts which no one has doubted and which have only gone unremarked because they are always before our eyes." Wittgenstein RFM I p142

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

"The greatest danger here is wanting to observe oneself." LWPP1, 459

"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 (this has to do with the Kantian solution to the problem of philosophy)." Wittgenstein CV p10 (1931)

“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

"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 satisfactions, it turns out that all intentionality is a matter of propositions." Searle PNC p193

"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 MSW p15

"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

These quotes are not chosen at random but (along with the others in my reviews of books by these two geniuses) are a précis of behavior from our two greatest descriptive psychologists.

Before commenting in detail on Making the Social World (MSW) I will first offer some comments on philosophy (descriptive psychology) and its relationship to contemporary psychological research as exemplified in the works of Searle (S) and Wittgenstein (W), since I feel that this is the best way to place Searle or any commentator on behavior, in proper perspective. It will help greatly to see my reviews of PNC, TLP, PI, OC,TARW and other books by these two geniuses of descriptive psychology,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 xlnt, but virtually unknown, supplement on the CR--"Searle Freed of Every Flaw."

S makes no reference to W's prescient statement of mind as mechanism in TLP, and his destruction of it in his later work. Since W, S has become the principal deconstructor of these mechanical views of behavior, and 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 reviews of W S and other books for more details.

Wittgenstein is for me easily the most brilliant thinker on human behavior. His work as a whole shows that all behavior is an extension of innate true-only axioms and that our conscious ratiocination (System 2) (S2) emerges from unconscious machinations (System 1) (S1) and is extended logically into culture (System 3(S3). See "On Certainty"(OC) for his final extended treatment of this idea-and my review thereof for preparation. His corpus can be seen as the foundation for all description of animal behavior, revealing how the mind works and indeed must work. The "must" is entailed by the fact that all brains share a common ancestry and common genes and so there is only one basic way they work, that this necessarily has an axiomatic structure, that all higher animals share the same evolved psychology based on inclusive fitness, and that in humans this is extended into a personality (a cognitive or phenomenological illusion) based on throat muscle contractions (language) that evolved to manipulate others (with variations that can be regarded as trivial).

Arguably, all of W's and S's work is a development of or variation on these ideas. Another major theme here, and of course in all discussion of human behavior, is the need to separate the genetically programmed automatisms, which underlie all behavior, from the effects of culture. Though few philosophers, psychologists, anthropologists, sociologists etc., explicitly discuss this in a comprehensive way, it can be seen as the major problem they

are dealing with. I suggest it will prove of the greatest value to consider all study of higher order behavior as an effort to tease apart not only fast and slow thinking (e.g., perceptions and other automatisms vs. dispositions- S1 and S2--see below), but the logical extensions of S2 into culture (S3).
What W laid out in his final period (and throughout his earlier work in a less clear way) are the foundations of evolutionary psychology (EP), or if you prefer, psychology, cognitive linguistics, intentionality, higher order thought or just animal behavior. Sadly, almost nobody seems to realize that his works are a 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 more or less understood him, have not realized the extent of his anticipation of the latest work on EP and cognitive illusions (Theory of Mind, framing, the two selves of fast and slow thinking etc., -- see below). Searle's work as a whole provides a stunning description of higher order social behavior that is possible because of 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.

Long before Searle, W rejected the idea that the Bottom Up approaches of physiology, experimental psychology and computation (e.g., Behaviorism, Functionalism, Strong AI, Dynamic Systems Theory, Computational Theory of Mind, etc.) could reveal what his Top Down deconstructions of Language Games (LG's) did. The principal difficulties he noted are to understand what is always in front of our eyes (we can now see this as obliviousness to System 1 (roughly what S calls 'the phenomenological illusion') and to capture vagueness ("The greatest difficulty in these investigations is to find a way of representing vagueness" LWPP1, 347).

As with his other aphorisms, I suggest one should take seriously W's comment that even if God could look into our mind he could not see what we are thinking--this should be the motto of the Embodied Mind and, as S makes clear, of Cognitive Psychology. But God could see what we are perceiving and remembering and our reflexive thinking, since these S1 functions are always causal mental states while S2 dispositions are only potentially CMS. This is not a theory but a fact about our grammar and our physiology. S muddies the waters here because he refers to dispositions as mental states as well, but as W did long ago, he shows that the language of causality just does not apply to the higher order emergent S2 descriptions—again not a theory but a description about how language (thinking) works.

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.

Some of W's favorite topics in his later second and his third periods are the different (but interdigitating) LG's of fast and slow thinking (System 1 and 2 or roughly Primary Language Games (PLG's) and Secondary Language Games (SLG's) of the Inner and the Outer--see e.g., Johnston- 'Wittgenstein: Rethinking the Inner' on how confusing the two is a major industry in philosophy and psychology), the impossibility of private language and the axiomatic structure of all behavior. Verbs like 'thinking', 'seeing' first described S1 functions but as S2 evolved they came to be applied to it as well, leading to the whole mythology of inner resulting from e.g., trying to refer to imagining as if it were seeing pictures inside the brain. The 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 UOA1 --Understanding of Agency 1-- and Emotions1- such as joy, love, anger) which can be described causally, while the evolutionarily later SLG's are expressions or descriptions of voluntary, System 2, slow thinking, mentalizing neurons, testable true or false, propositional, Truth2 and UOA2 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 just 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.

FMRI, PET, TCMS, iRNA, computational analogs, AI and all the rest are fascinating and powerful ways to extend our innate axiomatic psychology, to provide the physical basis for our behavior and facilitate our analysis of language games which nevertheless remain unexplainable--EP just is this way-- and unchanged. The true-only axioms, most thoroughly explored in 'On Certainty', are W's (and later Searle's) "bedrock" or "background" i.e., evolutionary psychology, which are traceable to the automated true-only reactions of bacteria and their descendants (e.g., humans), which evolved and operate by the mechanism of inclusive fitness (IF)--see Bourke's superb "Principles of Social Evolution".

W insisted that we should regard our analysis of behavior as descriptions rather than explanations, but of course these too are complex language games and one person's description is another's explanation. Beginning with their innate true-only, nonempirical (automated and nonchangeable) responses to the world, animals extend their axiomatic understanding via deductions into further true only understandings ("theorems" as we might call them, but this is a complex language game even in the context of mathematics).

Tyrannosaurs and mesons become as unchallengeable as the existence of our two hands or our breathing. This dramatically changes one's view of human nature. Theory of Mind (TOM) is not a theory at all but a group of true-only Understandings of Agency (UOA a term I devised 10 years ago) which newborn animals (including flies and worms if UOA is suitably defined) have and subsequently extend greatly (in higher eukaryotes). However, as I note here, W made it very clear that for much of intentionality there are System 1 and System 2 versions (language games)-the fast unconscious UOA1 and the Slow conscious UOA2 and of course these are heuristics for multifaceted phenomena. Although the raw material for S2 is S1, S2 also feeds back into S1— higher cortical feedback to the lowest levels of perception, memory,

reflexive thinking that is a fundamental of psychology. Many of W's examples explore this two way street (e.g., see the discussions of the duck/rabbit and 'seeing as' in Johnston).

I think it is clear that the innate true-only axioms W is occupied with throughout his work, and almost exclusively in OC (his last work `On Certainty'), 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 he has no idea W laid out the framework some 75 years ago), which is involuntary and unconscious and which corresponds to the mental states of perception (including UOA1) and memory and involuntary acts, as W notes over and over in endless examples. 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 (or not in the same sense), and do not have any definite time of occurrence and/or duration. But disposition words like "knowing", "understanding", "thinking", "believing", which W discussed extensively, have at least two basic uses. One is a peculiar philosophical use (but graduating into everyday uses) exemplified by Moore (whose papers inspired W to write OC), 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'), and the S2 one, which is their normal use as dispositions, which can be acted out, and which can become true or false (`I know my way home').

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 presumably not ever of slow System 2 dispositional thinking only, since any System 2 thought or intentional action cannot occur without involving much of the intricate network of "cognitive modules", "inference engines", "intracerebral reflexes", "automatisms", "cognitive axioms", "background" or "bedrock" (as W and later Searle call our EP).

Though W warned frequently against theorizing and produced more and

better examples of language in action than anyone, one might say that his aggregate aphorisms illustrated by examples constitute the most comprehensive "theory" of behavior ("reality") ever penned.

Finally, let me suggest that with this perspective, W is not obscure, difficult or irrelevant but scintillating, profound and crystal clear, that he writes aphoristically and telegraphically because we think and behave that way, and that to miss him is to miss one of the greatest intellectual adventures possible.

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

The Logical Structure of Rationality (LSR), or the Logical Structure of Mind (LSM), the Logical Structure of Behavior (LSB), the Logical Structure of Thought (LST), the Logical Structure of Consciousness (LSC), the Logical Structure of Personality (LSP), the Descriptive Psychology of Consciousness (DSC), the Descriptive Psychology of Higher Order Thought (DPHOT), Intentionality-the classical philosophical term.

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)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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 Prior Intentions
*** Searle's Intention In Action
**** Searle's Direction of Fit
***** Searle's Direction of Causation
****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly called this causally self- referential.
******* Tversky/Kahneman/Frederick/Evans/Stanovich defined cognitive systems.
******** Here and Now or There and Then

One should always keep in mind Wittgenstein's discovery that after we have

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

Those wishing a comprehensive up to date account of Wittgenstein, Searle and their analysis of 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 (2016).

Now for some comments on Searle's MSW. I will make some references to another of his recent works which I have reviewed- Philosophy in a New Century (PNC).

The ideas here are already published and nothing will come as a surprise to those who have kept up with his work. Like W, he 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. In various places in his work (e.g., p7 of PNC) he twice notes that our certainty about basic facts is due to the overwhelming weight of reason supporting our claims, but 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 itself the basis for judgment (reason) and cannot itself be judged. In the first sentence on p8 of PNC 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 non-revisable certainty (Certainty1 of S1) 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 p12 of PNC, 'consciousness' is described as 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.
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.

Those who wish to become acquainted with S's well-known arguments against the mechanical view of mind, which seem to me definitive, may consult Chaps 3-5 of his PNC. 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). 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 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, Kurzweil etc., who are left out in the cold.

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.

Chapter 5 of S's PNC nicely demolishes Computational Theory of Mind, Language of Thought etc., noting that 'computation', 'information', 'syntax', 'algorithm', 'logic', 'program', etc., are observer relative (i.e., psychological) terms and have no physical or mathematical meaning 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 the vast difference in its use (meaning). And of course, this is all an extension of classic Wittgenstein.

Every thinking person should read Chapter 6 of S's PNC "The Phenomenological Illusion" (TPI) as it shows his supreme logical abilities and his failure to appreciate the full power of 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 also 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 (though of course he did not use these terms).

But the really important thing is that TPI is not just a failing of a few philosophers, but a universal blindness to our Evolutionary Psychology (EP) that is itself built into EP and which has immense (and fatal) implications for the world. 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. 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-a fatal cognitive illusion.

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 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 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).

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.

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 IAA "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).

"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). The COS of PI need a whole action while those of IAA 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(IAA) which are conscious acts (i.e., S2) but both are causally self-referential (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, which Searle has used for many years and is the basis for an extended one I have created. In my view, it helps enormously to relate this to modern psychological research by using my S1, S2, S3 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.

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 of S3 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 in S3."

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 clear 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/S3 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.

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 S2/3 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 DIRA2/3 (i.e., the S2 desires and their cultural S3 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 which ground the dispositions and ensuing actions of S2/3.

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 DIRA2/3, 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 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 a 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.

Few notice (Budd in his superb book on W is one exception) that W posed an interesting resolution to this by suggesting 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. Subsequently, many have made similar suggestions based on physics and the sciences of complexity and chaos.

On p155 one should note that the Background/Network is our EP and its cultural extensions of S1, S2, S3.

Given the above I don't feel it necessary to comment on his discussion of Power and Politics but I will say a few words about human rights. I agree completely with his comment on p185 that the UN Declaration of Human Rights is an irresponsible document. The rapid and probably inexorable collapse of society is due to people having too many rights and too few responsibilities. The only tiny ray of hope for the world is that somehow people can be forced (few will ever do it voluntarily) to place the earth first and themselves second. Consuming resources and producing children must be regulated as privileges or the tragedy of the commons will soon end the game.

Overall, MSW 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 for basic psychology once you grasp what he is saying (see my reviews). Ideally, they should be read together: Searle for the clear coherent prose and generalizations on the operation of S2/S3, illustrated with W's perspicacious examples of the operation of S1/S2, and his brilliant aphorisms. If I were much younger I would write a book doing exactly that.

Seeing With the Two Systems of Thought—a Review of 'Seeing Things As They Are: a Theory of Perception' by John Searle (2015)

Michael Starks

ABSTRACT

As so often in philosophy, the title not only lays down the battle line but exposes the author's biases and mistakes, since whether or not we can make sense of the language game 'Seeing things as they are' and whether it's possible to have a 'philosophical' 'theory of perception' (which can only be about how the language of perception works), as opposed to a scientific one, which is a theory about how the brain works, are exactly the issues. This is classic Searle—superb and probably at least as good as anyone else can produce, but lacking a full 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. As in his previous work, Searle largely avoids scientism but there are frequent lapses and he does not grasp that the issues are always about language games, a failing he shares with nearly everyone. After providing a framework consisting of a Table of Intentionality based on the two systems of thought and thinking and decision research, I give a detailed analysis of the book.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those wishing a contemporary socio-political slant may see Suicidal Utopian Delusions in the 21st Century (2017).

As with Wittgenstein (hereafter W), everything that Searle (hereafter S) writes is a treasure and it is wonderful that he remains sharp as he nears 80. Unlike most, even his early work is still relevant and he is working on several other

books. I also suggest his 100 or so lectures and interviews on youtube, vimeo etc., which, though inevitably a bit repetitious, contain many statements not in his writings. I have read almost all of his work, and listened to all the lectures, most of them 2 or 3 times. These are of special interest as (like Wittgenstein) he does not read from notes, and so each is unique and not a replica of a paper, and he is a superb extemporaneous speaker who mostly uses unpretentious language (both so different from most others). The recent lectures given at European Universities are superb, but don't miss the old ones such as the BBC lecture "A Changing Reality-the science of human behavior", which gives an excellent account of why the lawful repetitious causality of the brain's fast automatic, nonlinguistic system 1 (S1) is fundamentally different and not describable in the same way as the limitless complexity of reasons characterizing the slow deliberative, linguistic conscious system 2 (S2), which generates a combinatorial explosion not usually representable in a useful way by scientific laws. The dual system (S1, S2) method of describing thought used in this review, common to reasoning research for some 20 years now, is my own and not Searle's. Since I have recently published a book analyzing Searle's work in comparison with that of Wittgenstein (The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017)) I will not repeat it and will concentrate on this book only.

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, a term not used by W and popularized principally by S) 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 'perception', 'consciousness', 'will', 'space', 'time' etc., but only the need to keep the use (COS) of these words clear. It is useful to keep in mind two comments by W that summarize scientism.

"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).

More than most, S avoids scientism but there are frequent lapses which I have pointed out in my many reviews of his work and in spite of his being perhaps the best all-around philosopher since W, he does not fully grasp that it is all about language games, a failing he shares with nearly everyone.

As so often in philosophy, the title not only lays down the battle line but exposes the author's biases and mistakes, since whether or not we can make sense of the language game 'Seeing things as they are' and whether it's possible to have a 'philosophical' 'theory of perception', which can only be about how the language of perception works, as opposed to a scientific one, which is a theory about how the brain works, are exactly the issues. The subtitle (A theory of Perception) is likewise contentious (for Wittgensteinians at least) since W warned repeatedly against theorizing and even insisted it was impossible to produce theories about behavior, as everyone would agree with them—i.e., they would be truisms about our use of language. Anything

that looks like a theory of higher order thought (mind, behavior) is really just a description of what we do, unless of course they are making the near universal mistake of giving a scientific theory of how the brain or the world works-a different kind of 'philosophy' entirely—i.e. 'Scientism'. Searle is well aware of this and has commented on it many times, insisting W is wrong about theories, but I don't think so. Only science has theories, i.e., propositions that can be shown true or false and often new evidence leads us to change or even abandon them, while philosophy proper (the elucidation in a given context of a language game describing our higher order behavior) will be obviously correct and not subject to revision as we all recognize it as true—i.e. as a correct use of language. But if S wants to call his generalizations about language use 'theories' that's fine, just so long as we are not led astray. I have dealt with these issues at length in my other writings and in particular my review of Carruthers' 'The Opacity of Mind'.

It is very useful to read the little volume 'Neuroscience and Philosophy' where Searle, Dennett, and Bennett and Hacker have at one another over which language games should be played. Bennett and Hacker have given the most detailed exposition of these games in 'Philosophical Foundations of Neuroscience'(2003) which is continued in Hacker's recent 3 volumes on Human Nature.

W insisted that there are no new discoveries to be made in philosophy, nor explanations to be given, but only clear descriptions of behavior (language) in a particular context. Once one understands that all the problems are confusions about how language works, we are at peace and philosophy in W's sense has achieved its purpose. As W and 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 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). In our modern idiom, perception is the automatic, causally self-reflexive

(Searle), rapid, true-only mental states or presentations (Searle) of System 1 (S1), while most of what we 'mean' by the 'mind' are the deliberate, slow, reasoned dispositions with public true or false representations (conditions of satisfaction-COS) of System 2 (S2).

Searle waits until p45 to present the most recent version of a table he has used before. I have been expanding it for some years and as I find it critical to understanding behavior, I begin by presenting its most recent version here. In accord with W's work and Searle's terminology, I categorize the representations of S2 as public Conditions of Satisfaction (COS) and in this sense the 'phenomena' of S1 such as perceptions do not have COS. In other writings Searle says they do, but as noted in my other reviews, I think it is then essential to refer to COS1 ("private" presentations) and COS2 (public representations). Likewise, I have changed his 'Direction of Fit' to 'Cause Originates From' and his 'Direction of Causation' to 'Causes Changes In'.

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

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.

(Involuntary –automated-Rules R1) Thinking(Cognition) (No gaps)
(Voluntary-deliberative- Rules R2) Willing (Volition) (3 gaps)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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 Prior Intentions

*** Searle's Intention In Action

**** Searle's Direction of Fit

***** Searle's Direction of Causation

****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly calls 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 brain states), and this is why it's not possible to reduce higher order behavior to a system of laws, which would have to state all the possible contexts –hence Wittgenstein's warnings against theories. This is a special case of the irreducibility of higher level descriptions to lower level ones that has been explained many times by Searle, Daniele Moyal-Sharrock (DMS), P.M.S. Hacker, Wittgenstein 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

space-time. 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, that can be described in PLG's, in which the mind automatically fits (presents) the world (is Causally Self Reflexive--Searle) -- the unquestionable, true-only, axiomatic basis of rationality over which no control is possible).

Preferences, Desires, and Intentions are descriptions of slow thinking conscious Voluntary Abilities— that can be described in SLG's-- in which the mind tries to fit (represent) the world. Behaviorism and all the other confusions of our default descriptive psychology (philosophy) arise because we cannot see S1 working and describe all actions as 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.

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

INTENTIONS: (I will make X True) Intending

ACTIONS (I am making X True) : Acting, Speaking , Reading, Writing, Calculating, Persuading, Showing, Demonstrating, Convincing, Doing Trying, Attempting, Laughing, Playing, Eating, Drinking, Crying, Asserting (Describing, Teaching, Predicting, Reporting), Promising , Making or Using Maps, Books, Drawings, Computer Programs–these are Public and Voluntary and transfer Information to others so they dominate over the Unconscious, Involuntary and Informationless S1 reflexes in explanations of behavior (The Phenomenological Illusion, The Blank Slate or the 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 algorithmatized by Rott (1999), Spohn etc.

Intentionality (cognitive or evolutionary psychology) consists of various aspects of behavior which are innately programmed into cognitive modules which create and require consciousness, will and self, and in normal human adults nearly all except perceptions and some memories are purposive, require public acts (e.g., language), and commit us to relationships in order to increase our inclusive fitness (maximum expected utility or Bayesian utility maximization). 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 inclinational verbs such as "I believe" normally describe my ability to predict my probable acts based on knowledge (i.e., S2) but can also seem (in philosophical contexts) to be descriptive of my mental state and so not based on knowledge or information (W and see my review of the book by Hutto and Myin). In the former S1 sense, it does not describe a truth but makes itself true in the act of saying it --i.e., "I believe it's raining" makes itself true. That is, disposition verbs used in first person present tense can be causally self-reflexive--they instantiate themselves but then they are not testable (i.e., not T or F, not S2). However past or future tense or third person use--"I believed" or "he believes" or "he will believe' contain or can be resolved by information that is true or false, as they describe public acts that are or can become verifiable. Likewise, "I believe it's raining" has no information apart from subsequent actions, even for me, but "I believe it will rain" or "he will think it's raining" are potentially verifiable public acts displaced in spacetime that intend to convey information (or misinformation).

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

called Reflexes of S1 and are automatic, nonreflective, NON-Propositional and NON-Attitudinal functioning of the hinges (axioms, algorithms) of our Evolutionary Psychology (Moyal-Sharrock after Wittgenstein).

Thus, when Searle introduces some terminology on p6 of STATA we see that VisExp (it is raining) is S1 while Bel (it is raining) or Assert (it is raining) is S2.

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.

As 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. "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 remarks in various writings that we can understand consciousness by studying the brain or 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).

"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

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) 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)

Before remarking further on 'STATA' I will first offer some essential 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 S's PNC (Philosophy in a New Century), Making the Social World (MSW) and W's BBB (Blue and Brown Books), PI (Philosophical Investigations), OC (On Certainty), 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 W/S framework.

As noted in my other reviews, philosophical mistakes are of interest since they are the universal defaults of our psychology, due the fact that our language lacks perspicuity, as W first noted in the BBB (Blue and Brown Books) ¾ of a century ago.

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 (HOT) is an effort to tease apart not only fast S1 and slow S2 thinking --e.g., perceptions and other automatisms vs. dispositions, but the extensions of S2 into culture (S3). Searle's work as a whole provides a stunning description of higher order S2/S3 social behavior, 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.

S1 is the simple automated functions of our involuntary, System 1, fast thinking, mirror neuron, true-only, non- propositional, prelinguistic mental states- our perceptions and memories and reflexive acts 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 linguistic functions are expressions or descriptions of voluntary, System 2, slow thinking, mentalizing neurons. That is, of 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 just a fact that attempts to describe System 2 in terms of neurochemistry, atomic physics, mathematics, make no sense--see W, S, Hacker etc.).

The investigation of System 1 has revolutionized psychology, economics 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 not of S2 only, since it cannot occur without involving much of the intricate S1 network of "cognitive modules", "inference engines", "intracerebral reflexes", "automatisms", "cognitive axioms", "background" or "bedrock" --as W and later S call our Evolutionary Psychology (EP).

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 behavior as described in my other reviews.

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 the 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 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

Like Carruthers and others, S sometimes 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. 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 activities of S2 must be able to become the conscious 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 Certainly, 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.

Another crucial notion 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 generates endless cultural extensions, and 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 Searle `The Phenomenological Illusion', by Pinker `The Blank Slate' and by Tooby and Cosmides `The Standard Social Science Model') is that S2 has generated the action consciously for reasons of which we are fully aware and in control of, but anyone familiar with modern biology and psychology can see that this view is not credible.

A sentence expresses a thought (has a meaning), when it has clear 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 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.

“Every sign is capable of interpretation but the meaning mustn’t be capable of interpretation. It is the last interpretation” W’s BBB p34

Though W is correct that there is no mental state that constitutes meaning, S 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. 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," or as S says its COS. Hence W's summation (p140 Budd) 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."

W can also be regarded as a pioneer in evolutionary cognitive linguistics. He dissects hundreds of language games showing how the true-only perceptions, memories and reflexive actions of system one (S1) grade into the thinking, remembering, and understanding of system two (S2) dispositions, and many of his examples also address the nature/nurture issue explicitly. With this evolutionary perspective, his later works are a breathtaking revelation of human nature that is entirely current and has never been equaled. Many perspectives have heuristic value, but I find that this evolutionary two systems view is the best. To paraphrase Dobzhansky's famous comment: "Nothing in philosophy makes sense except in the light of evolutionary psychology."

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 and to abandon the myth of introspective access to our "inner life" (e.g., "The greatest danger here is wanting to observe oneself." LWPP1, 459).

Incidentally, the equation of logic or grammar and our axiomatic psychology is essential to understanding W and human nature (as Daniele Moyal Sharrock (DMS) but afaik nobody else, points out).

Our shared public experience becomes a true-only extension of our axiomatic EP and cannot be found mistaken without threatening our sanity. That is, the consequences of an S1 'mistake' are quite different from an S2 mistake. 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 axioms and not testable true or false propositions.

In spite of the fact that most of the above has been known to many for decades (and even ¾ of a century in the case of some of W's teachings), I have never seen anything approaching an adequate discussion in behavioral science texts (i.e., philosophy, psychology, sociology, anthropology, literature etc.) and with rare exceptions there is barely a mention.

It should be obvious from the above that the 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 other sense but that is not what philosophy of mind (or to W, S or me what any interesting and substantive philosophy) is about. As often occurs, 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, which I find (with W) incoherent. Not that we ought not to give it up but there is no sense that can be made of such a suggestion anymore that one can give up running, desiring, intending, hoping etc. Likewise, nobody can give arguments for the background (i.e., our axiomatic psychology), as our being able to talk or to live at all presupposes it (as W noted frequently). Yes, 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. The 20,000 pages of W's nachlass are hands down the best lesson on how this has to be done.

One needs to remember that dispositions (e.g., thinking, knowing) that state a COS are thereby true or false and a function of S2 (as opposed to S1 which are true only). And the "radical underdetermination of meaning" aka "the combinatorial explosion" was first solved by W who noted that S1 can be true only.

In another recent volume, S comments "The heart of my argument is that our linguistic practices, as commonly understood, presuppose a reality that exists independently of our representations", to which I would add "Our life shows a world that does not depend on our existence and cannot be intelligibly challenged."

Now that we have a framework, we can consider Searle's comments on the nature of perception.

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 is 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 Neuroscience and Philosophy' or 'Philosophical Foundations of Neuroscience' to get a feel for this. Also, a quick review of the table of Intentionality above will place his terms, 'causally self-reflexive' etc. in context. Sadly, like nearly all philosophers, Searle (S) has not adopted the two systems framework, so it's much harder to keep things straight.

So 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), nontestable (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' S1 'experiences' can only be their public manifestations—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 p33 his 'basic forms' of intentionality are S1 while the 'derivative forms' are S2 and the two modes 'seeing' and 'thinking' as used here are S1 and S2 but the universal problem is that these words can be used for either S1 or S2 and nobody keeps them distinct.

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 an hallucination (or direct brain stimulation etc.) the 'object' is only the similar mental state resulting from brain activation.

On p37 as usual in describing human behavior it seems to me very useful to try to keep S1 and S2 separated so here we can refer to the perception of something as P1 but when we describe it we can refer to the perception as P2.

As W showed us, the big mistake is not just about understanding perception but not 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.

On p53 what exactly is the test (COS2) that shows that the cause of or mental state of an hallucination is the 'same' as that when there is no hallucination? Even if we 'see' our long dead mother, with a few possible rare exceptions of insanity, brain damage etc., we know it's not her—i.e., it's false and we take the failure to distinguish the two as a sign of illness. So the COS2 in

hallucination is only that we feel as if she were present, though we (normally) know it cannot be, while the COS2 when she was alive is that we can confirm by a public test it is her. But he is correct that there is a more or less common percept in the two cases so that the presentation or COS1 is similar and conceivably could sometimes be as identical as any two mental states, thoughts, feelings etc. ever get—i.e., not very.

On p59 I believe that the argument from transparency originated with W. "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). At the bottom of the page, once again the presentation is S1 and the description or representation is S2. 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.

Regarding p100, see W's 'On Certainty' and DMS's papers and books on it or just my brief analysis of their efforts in my LSR paper. On p101 we can usually substitute COS for 'truth conditions'.

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 had 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.

On p108 we can say that deliberate acts (A2) always must happen by activating S1 just as must reflexive acts (A1). On p109 we might rephrase '…whenever you consciously perceive anything, you take the cause of your perceptual experience to be its object' as 'perceptions, like all functions of S1 are nontestable'.

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 p118 if W did commit the Bad Argument it was in the TLP and not his later work, and in any case the 'fact' is the COS (the representation) or the truthmaker of S2 stated by a sentence which is just the right description.

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).

"Philosophy simply puts everything before us, and neither explains nor deduces anything." (PI 126) "In philosophy we do not draw conclusions" (PI 599)

"If one tried to advance theses in philosophy it would not be possible to debate them, because everyone would agree to them" (PI 128)

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 S, 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 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)

It is a sign of Wittgenstein's unique genius that even though I have spent many years reading the best philosophers and psychologists of our times, I always have to resist the urge to throw the book down and go back to the master, and when I come to a quote from him it is like coming upon a glass of cold water while trudging through the desert.

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. Also, we all start with default language use which is full of confusions or as W likes to say it is not 'perspicuous'.

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 we are reminded that the first and maybe best refutation of mind as machine was given by W in the 30's. 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.

Discussions of blind sight (p209), like those of split brains (commissurotomy) and so much else in cognitive science are typically incoherent due to the fact that the phenomena are new and the usual language games are not applied in a clear and consistent way. Bennett and Hacker, among others, give some excellent discussions of this. 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. Libet's famous experiments have been debunked in various ways by philosophers and by other experiments.

On p214 the reflexes referred to are the formerly deliberative conscious actions of S2 which have become automated and part of S1 which I call S2A (automated) as distinct from S2D or those which remain deliberative and conscious.

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 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.

P222 section II brings us again to the definitive statement on this foundational issue which W addressed in 'On Certainty'. Searle makes further comments in the 5th of his audiotaped lectures on the Philosophy of Society (see youtube).

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.
P233. The most basic of the primary qualities or axioms of our psychology are time, space, event, object etc., which following W, we can call the basic hinges, but it does not seem clear how to distinguish these from color, shape, size etc. See the excellent recent papers and books of DMS on this.

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.

PHILOSOPHY AND PSYCHOLOGY

A Master Wittgensteinian Surveys Human Nature -A Review of Human Nature-the Categorial Framework by PMS Hacker (2010)

Michael Starks

Abstract

Materialism, reductionism, behaviorism, functionalism, dynamic systems theory and computationalism are popular views, but they were shown by Wittgenstein and more recently by Searle to be incoherent. The study of behavior encompasses all of human life but behavior is largely automatic and unconscious and even the conscious part, mostly expressed in language (which Wittgenstein equates with the mind), is not perspicuous, so it is critical to have a framework which Searle calls the Logical Structure of Rationality (LSR) and I call the Descriptive Psychology of Higher Order Thought (DPHOT). After summarizing the framework worked out by Wittgenstein and Searle, as extended by myself and by modern reasoning research, I comment on this first book in a trilogy on Human Nature by P.M.S. Hacker, the leading authority on Wittgenstein and one of the best modern philosophers.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those wishing a contemporary socio-political slant may see Suicidal Utopian Delusions in the 21st Century (2017).

Before remarking on "Human Nature", 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 PNC (Philosophy in a New Century), TLP, PI, OC by W, Making the Social World (MSW) 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."
BBB p37

"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

Incidentally, these quotes from W show that in spite of Searle's frequent

disparaging of W for his famous rejection of 'theory', W makes far more and far broader and more profound generalizations than Searle.

These quotes are not chosen at random but (along with the others in my reviews) are an outline of behavior (human nature) from our two greatest descriptive psychologists. In considering these matters we must keep in mind that philosophy 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, recognising, 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).

And also, Horwich gives one of the most beautiful summaries of where an understanding of Wittgenstein leaves us that I have ever seen.
"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."

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 (S3).

Searle's (S) work as a whole provides a stunning description of higher order S2/S3 social behavior which is due to the recent evolution of genes for dispositional psychology, while the later Wittgenstein (W) shows how it is based on true-only unconscious axioms of S1 which evolved into conscious dispositional propositional thinking of S2.

S1 is the simple automated functions of our involuntary, System 1, fast thinking, mirror neuron, true-only, non- propositional, mental states- our perceptions and memories and reflexive acts 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 linguistic functions 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 just a fact that attempts to describe System 2 in terms of neurochemistry, atomic physics, mathematics, make no sense--see W for many examples and Searle and Hacker (Human Nature)for disquisitions).

One should take seriously W's comment that even if God could look into our mind he could not see what we are thinking--this should be the motto of Cognitive Psychology. Yes, a cognitive psychologist of the future *may* be able to see what we are perceiving and remembering and our reflexive thinking and acting, since these S1 functions are always causal mental states (CMS) but S2 dispositions are only potentially CMS and so not realized or visible. This is not a theory but description of our language, mind, life, grammar (W). S, Carruthers (C) and others muddy the waters here because they sometimes refer to dispositions as mental states as well, but as W did long ago, S, Hacker and others show that the language of causality just does not apply to the higher order emergent S2 descriptions--again not a theory but a description of how our dispositional states (language, thinking) work.

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). 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 evolved psychology (EP) which seeks explanations in terms of what we can deliberately think through slowly (S2), rather than in the automated S1, of which we mostly remain oblivious--called

by S in PNC `The Phenomenological Illusion' (TPI). TPI is not a harmless philosophical error but a universal obliviousness to our biology which produces the illusion that we control our life and among the consequences are the inexorable collapse of what passes for civilization.

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 (or not in the same sense as S1 states), and do not have any definite time of occurrence and/or duration. But disposition words like "knowing", "understanding", "thinking", "believing", which W discussed extensively, have at least two basic uses. One is a peculiar 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')--i.e., they are Causally Self Referential (CSR)—i.e., to see a cat makes it true and in the normal case no test is possible, 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 external, public, testable Conditions of Satisfaction (COS) and are not CSR.

The investigation of involuntary fast thinking of System 1 has revolutionized psychology, economics 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 presumably not ever of slow System 2 dispositional thinking only, since any System 2 thought or intentional action cannot occur without involving much of the intricate network of "cognitive modules", "inference engines", "intracerebral reflexes", "automatisms", "cognitive axioms", "background" or "bedrock" --as W and later Searle call our Evolutionary Psychology (EP).

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.

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 (S3). I expect this fairly well describes the basic structure of behavior.

These descriptions of cognition and volition are summarized in Table 2.1 of MSW, which Searle has used for many years and is the basis for an extended one I have created. In my view, it helps enormously to relate this to modern psychological research by using my S1, S2, S3 terminology and W's true-only vs propositional (dispositional) description. Thus, CSR references S1 true-only perception, memory and prior intention, while S2 refers to dispositions such as belief and desire.

So, recognizing that S1 is only upwardly causal (world to mind) and contentless (lacking representations or information) while S2 has content and is downwardly causal (mind to world) (e.g., see my review of Hutto and Myin's `Radical Enactivism'), I would change the paragraphs from 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. 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 decoupled from intention) and other S2 propositional dispositions of our slow thinking later evolved second self, are totally dependent upon (have their COS originating in) the 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 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. S1 and S2 feed into each other and are often orchestrated seamlessly by the learned deontic cultural relations of S3, 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.'

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.

Like Carruthers and others, S sometimes 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 demonstrates, 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.

Thinking is propositional and so deals with true or false statements, which means that it is a typical S2 disposition which can be tested, as opposed to the true-only automatic cognitive functions of S1. Or you can say that spontaneous utterances and actions are the primitive reflexes or Primary Language Games (PLG) of S1, while conscious representations are the dispositional Secondary Language Games (SLG's) of S2. It sounds trivial and indeed it is, but this is the most basic statement of how behavior works and hardly anyone has ever understood it.

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, 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)." And I would restate his description on p129 of how we carry out DIRA2/3 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 DIRA2/3, but these are very restricted extensions of unconscious DIRA1 (the ultimate cause).

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 into 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 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/S3 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.

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. This can be seen as another statement of W's argument against private language (personal interpretations vs publicly testable ones). Likewise, with rule following and interpretation --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, and it this which underlies all behavior and which is schematized in the table.

As I have noted in my other reviews, few if any have fully understood the later W and, lacking the S1, S2 framework it is not surprising. Thus, one can understand why one cannot imagine an object while seeing it as the domination of S2 by S1. There is no test for my inner experiences, so whatever comes to mind when I imagine Jack's face is 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 the lack of any test makes them inapplicable. Two of W's famous examples used for combatting this temptation are 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 another of W's famous comments--"The decisive movement in the conjuring trick has been made, and it was the very one we thought quite innocent." That is, the first few sentences or often the title commit one to a

way of looking at things (a language game) which prevents clear use of language in the present context.

A sentence expresses a thought (has a meaning), when it has clear COS, and this means has 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) "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 interpreted as the logical structure of language, 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.

Likewise, with the question "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," or as S says its COS. Hence W's summation (p140 Budd) 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 Potential Events (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. 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.

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

The Logical Structure of Rationality (LSR), or the Logical Structure of Mind (LSM), the Logical Structure of Behavior (LSB), the Logical Structure of Thought (LST), the Logical Structure of Consciousness (LSC), the Logical Structure of Personality (LSP), the Descriptive Psychology of Consciousness (DSC), the Descriptive Psychology of Higher Order Thought (DPHOT), Intentionality-the classical philosophical term.

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)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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 Prior Intentions

*** Searle's Intention In Action

**** Searle's Direction of Fit

***** Searle's Direction of Causation

****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly calls 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 brain states), and this is why it's not possible to reduce higher order behavior to a system of laws, which would have to state all the possible contexts –hence Wittgenstein's warnings against theories. This is a special case of the irreducibility of higher level descriptions to lower level ones that has been explained many times by Searle, Daniele Moyal-Sharrock (DMS), P.M.S. Hacker, Wittgenstein 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 space-time. 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, that can be described in PLG's, in which the mind automatically fits (presents) the world (is Causally Self Reflexive--Searle) -- the unquestionable, true-only, axiomatic basis of rationality over which no control is possible).

Preferences, Desires, and Intentions are descriptions of slow thinking conscious Voluntary Abilities— that can be described in SLG's-- in which the mind tries to fit (represent) the world. Behaviorism and all the other confusions of our default descriptive psychology (philosophy) arise because we cannot see S1 working and describe all actions as 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.

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

INTENTIONS: (I will make X True) Intending

ACTIONS (I am making X True) : Acting, Speaking , Reading, Writing, Calculating, Persuading, Showing, Demonstrating, Convincing, Doing Trying, Attempting, Laughing, Playing, Eating, Drinking, Crying, Asserting (Describing, Teaching, Predicting, Reporting), Promising , Making or Using Maps, Books, Drawings, Computer Programs–these are Public and Voluntary and transfer Information to others so they dominate over the Unconscious, Involuntary and Informationless S1 reflexes in explanations of behavior (The Phenomenological Illusion, The Blank Slate or the 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 algorithmatized by Rott (1999), Spohn etc.

Intentionality (cognitive or evolutionary psychology) consists of various aspects of behavior which are innately programmed into cognitive modules which create and require consciousness, will and self, and in normal human adults nearly all except perceptions and some memories are purposive, require public acts (e.g., language), and commit us to relationships in order to increase our inclusive fitness (maximum expected utility or Bayesian utility maximization). 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 inclinational verbs such as "I believe" normally describe my ability to predict my probable acts based on knowledge (i.e., S2) but can also seem (in philosophical contexts) to be descriptive of my mental state and so not based on knowledge or information (W and see my review of the book by Hutto and Myin). In the former S1 sense, it does not describe a truth but makes itself true in the act of saying it --i.e., "I believe it's raining" makes itself true. That is, disposition verbs used in first person present tense can be causally self-reflexive--they instantiate themselves but then they are not testable (i.e., not T or F, not S2). However past or future tense or third person use--"I believed" or "he believes" or "he will believe' contain or can be resolved by information that is true or false, as they describe public acts that are or can become verifiable. Likewise, "I believe it's raining" has no information apart from subsequent actions, even for me, but "I believe it will rain" or "he will think it's raining" are potentially verifiable public acts displaced in spacetime that intend to convey information (or misinformation).

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

called Reflexes of S1 and are automatic, nonreflective, NON-Propositional and NON-Attitudinal functioning of the hinges (axioms, algorithms) of our Evolutionary Psychology (Moyal-Sharrock after Wittgenstein).

Now for some comments on "Human Nature: The Categorical Framework" (HN).
Hacker is the world's leading authority on W and much of his work has been dedicated to explaining him so there is inevitably a Wittgensteinian feel to much of this book. This is the first of 3 volumes on Human Nature (the second The Intellectual Powers: A Study of Human Nature has now appeared and the third on ethics should follow soon) and its aim is to lay out the classes or categories of the psychology of intentionality. The quote from H above gives the best brief overview of what needs to be described as I have seen. And this description is, as both H and W insist, a conceptual and not scientific one for reasons that should be obvious from their work. This is totally at odds with the views of many others (most notoriously e.g. Dennett, Carruthers and the Churchlands) who think that not only must philosophy explain behavior but that it must fundamentally change as science progresses.

A capsule summary of what H is getting at here can be gained by looking at the various charts and I again suggest comparing them with my table above. Sadly, there is no bibliography-a major failing, but this is trivial compared to the lack of any serious discussion of the work of John Searle (S)--in my view, next to W, the major philosopher of recent times. Since I have referenced S many times above and in my other reviews I will not repeat the reasons for this view here. Recently there have been some exchanges between the two recorded in "Neuroscience and Philosophy" which appeared as a result of H's views expressed e.g. in Philosophical Foundations of Neuroscience which I will review soon. Both authors score some points and miss critical ideas in the others work. I have noted S's failure to appreciate W before. Hacker is representing W's views or at least Wittgensteinian views most of the time so we get as close as we ever will to a confrontation between the two geniuses of descriptive psychology --W and S.

Though H gives the best characterization of the task of philosophy I have seen

(see above) nevertheless his comment on p10 makes me note again that it is just the descriptive psychology of higher order thought.

Anyone interested in a concise demolition of Quine (another great mind who totally missed W and thus the whole enterprise of philosophy) should see H's paper `PASSING BY THE NATURALISTIC TURN: ON QUINE'S CUL-DE-SAC' (though of course Q's deconstruction has been done by many including S).

The discussion of the logical (psychological) difference between the S1 causes and the S2 reasons in Chapter 7, esp. on 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 and so have others, but this discussion is the best and most concise I can recall and it is basic to any understanding of behavior. Of course, the same issue arises with all scientific and mathematical concepts. The discussion of mental states vs. dispositions is excellent and reminds me that S's continued reference to dispositions as mental states and his reference to mental states as representations (actually `presentations" in his latest work) with COS, is (in my view) counterproductive. Though I accept most of S's ontology and epistemology I don't see the advantage of regarding our seeing an apple as the COS of a perception rather than that they are the true only results of the unconscious actions of S1.

The table on p147 and the whole chapter on agency reminds me again of how greatly this work would have benefited from the S, S2 notions and S's concepts such as Prior Intention, Intention in Action, intentional gaps, DOF, COS, CSR etc. 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.

The footnote on p235-6 reminds us that it was Descartes mistake that played a major role in laying the dead hand of private language and introspection on philosophy.

I see as another failing H's obliviousness (which as noted he shares with S and almost all 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', as I have noted in many reviews (and as DMS noted in her superb book on OC). This is sad, as I have described how it was W who did the first and best job of describing the two systems (though nobody else has noticed) and that OC represents a major event in intellectual history. One of the numerous places this comes out is p245 in the discussion of doubt where he could have noted that `grammar' is another word for the axiomatic true only EP of S1. Likewise, with his table on p19 where one kind of `proposition' is listed as conceptual truths--i.e., what W called true-only sentences or ideas, the axiomatic EP or `grammar' that is the basis for judging.

In spite of what I see as its limitations, this is a unique work of great interest to philosophers, psychologists, linguists, AI researchers and many others. One hopes that Hacker is able to complete a second edition.

Those wishing a comprehensive up to date account of Wittgenstein, Searle and their analysis of behavior from the modern two systems view may consult my article The Logical Structure of Philosophy, Psychology, Mind and Language as Revealed in Ludwig Wittgenstein and John Searle (2017).

Is there such a thing as pragmatics? -- Review of Concise Encyclopedia of Pragmatics 2nd ed. (2009)

Michael Starks

ABSTRACT

Clearly neither I nor anyone will ever read any substantial part of this massive tome so I will discuss the one article that interests me most and which I think provides the framework necessary for the understanding of all the rest. I refer to the one on Ludwig Wittgenstein (W). Even were I to try to discuss others, we would not get past the first page as all the issues here arise immediately in any discussion of behavior. The differentiation of pragmatics and semantics is largely meaningless. It is defensible that one might subtitle this work 'Developments of Wittgenstein's Contextualism', but of course this term has inevitably been corrupted by philosophers. One might then say that pragmatics and semantics are parts of or coextensive with epistemology and ontology and the descriptive psychology of higher order thought (Searle's Logical Structure of Rationality) or that they describe how we use noises in specific contexts to give them meaning --i.e., a true or false (propositional) use which Searle calls their Conditions of Satisfaction. Adding the Wittgenstein/Searle work to modern research on thinking provides a framework for pragmatics, semantics and all other human behavior.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

Clearly neither I nor anyone will ever read any substantial part of this massive tome so I will discuss the one article that interests me most and which I think provides the framework necessary for the understanding of all the

rest. I refer to the one on Ludwig Wittgenstein (W). Even were I to try to discuss others, we would not get past the first page as all the issues here arise immediately in any discussion of behavior. The article is more or less ok as far as it goes but, as with all discussion of W, it does not go nearly far enough. I must apologize to those who may read some of my other reviews as they often repeat this framework, as it is essential and I cannot assume the reader is familiar with it.

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 see this. W analysts such as Baker and Hacker (B&H), Read, Harre, Horwich, Stern, Hutto and Moyal-Sharrock do marvelously but stop short of putting him in the center of current psychology and linguistics, where he certainly belongs. It should also be clear that insofar as they are coherent and correct, all accounts of higher order behavior (e.g., Pragmatics) are describing the same phenomena and ought to translate easily into one another. Thus, not only Pragmatics, but such recently fashionable themes as "Embodied Mind" and "Radical Enactivism" should flow directly from and into W's work (and they do).

The failure of even the best thinkers to fully grasp W's significance is partly due to the limited attention On Certainty (OC) and his other 3rd period works have received, but even more to the inability of most to understand how profoundly our view of philosophy (which I call the descriptive psychology of higher order thought-DPHOT- or more precisely the study of the language

used in DPHOT --which Searle calls the logical structure of rationality- LSR), anthropology, sociology, politics, linguistics, law, morals, ethics, religion, aesthetics, literature and all of animal behavior alters once we embrace the evolutionary framework.

The dead hand of the blank slate view of behavior still rests heavily and is the default of the second self of slow thinking conscious System 2, which (without education) is oblivious to the fact that the groundwork for all behavior lies in the unconscious, fast thinking axiomatic structure of System 1 (Searle's 'Phenomenological Illusion'). Searle summed this up in a very insightful recent article by noting that many logical features of intentionality are beyond the reach of phenomenology because the creation of meaningfulness (i.e., the COS of S2) out of meaninglessness (i.e., the reflexes of S1) is not consciously experienced. See Philosophy in a New Century (PNC) p115- 117 and my review of it.

Before remarking on this book, it is essential to grasp the W/S framework so I will first offer some comments on philosophy and its relationship to contemporary psychological research as exemplified in the works of Searle (S), Wittgenstein (W), Baker and Hacker (B&H), Read, Hutto, Daniele Moyal-Sharrock(DMS) et. al. It will help to see my reviews of various books by Searle such as Philosophy in a New Century (PNC), and Making the Social World (MSW), the classics by W such as TLP, PI, and other books by and about these geniuses, who provide a clear description of higher order behavior not found in psychology books, that I will refer to as the Wittgenstein/Searle (W/S) framework. To say that Searle has carried on W's work is not to imply that it is a direct result of W study, but rather that because there is only ONE human psychology (for the same reason there is only ONE human cardiology), that anyone accurately describing behavior (e.g., language) must be enunciating some variant or extension of what W said. Virtually everyone who discusses language thinks it essential to mention Pinker, Grice and Chomsky, but few realize W's work was far broader and more penetrating. One would think that advanced studies of behavior would all begin with a broad general biologically founded framework for describing intentionality (higher order thought, language, descriptive psychology, thinking etc.) but sadly this is mistaken so I

will first present what I consider the minimum essentials.

A major theme in all discussion of human behavior is the need to separate the genetically programmed automatisms of S1 from the less mechanical linguistic dispositional behavior of S2 and these in turn from the effects of culture (S3). To rephrase, all study of higher order behavior is an effort to tease apart not only fast System 1 (S1) and slow System 2 (S2) thinking --e.g., perceptions and other automatisms vs. dispositions, but the extensions of S2 into culture (S3). Searle's work as a whole provides a stunning description of higher order S2 social behavior i.e., of '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 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 Blue and Brown Books (BBB) p18. Another notable comment was that if we are not concerned with "causes" the activities of the mind lie open before us –see BB p6 (1933). Likewise, the 20,000 pages of his nachlass demonstrated his famous dictum that the problem is not to find the solution but to recognize as the solution what appears to be only a preliminary. See his Zettel p312-314. And again, he noted 80 years ago that we ought to realize that we can only give *descriptions* of behavior and that these are not hints of *explanations* (BBB p125).

The common ideas (e.g., the subtitle of one of Pinker's books "The Stuff of Thought: language as a window into human nature") that language (mind, speech) is a window on or some sort of translation of our thinking or even (Fodor's LOT, Carruthers' ISA, etc.) that there must be some other "Language of Thought" of which it is a translation, were rejected by W, who tried to show, with hundreds of continually reanalyzed perspicuous examples of language in action, that language is not a picture of but is itself thinking or the mind, and his whole corpus can be regarded as the development of this idea. Many have

deconstructed the idea of a 'language of thought' but in my view, none better than W in BBB p37— "if we keep in mind the possibility of a picture which, though correct, has no similarity with its object, the interpolation of a shadow between the sentence and reality loses all point. For now the sentence itself can serve as such a shadow. The sentence is just such a picture, which hasn't the slightest similarity with what it represents." So, language issues direct from the brain and what could count as evidence for an intermediary?

W rejected the idea that the Bottom Up approaches of physiology, psychology and computation could reveal what his Top Down analysis of Language Games (LG's) did. The difficulties he noted are to understand what is always in front of our eyes and to capture vagueness –i.e., "the greatest difficulty in these investigations is to find a way of representing vagueness" (LWPP1, 347). And so, speech (i.e., oral muscle contractions, the principal way we interact) is not a window into the mind but is the mind itself, which is expressed by acoustic blasts about past, present and future acts (i.e., our speech using the later evolved Language Games (LG's) of the Second Self--the dispositions such as imagining, knowing, meaning, believing, intending etc.). Some of W's favorite topics in his later second and his third periods are the interdigitating mechanisms of fast and slow thinking (System 1 and 2), the irrelevance of our 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 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 into S3. 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. And the recent travesty by Nowak and Wilson in no way impacts the fact that IF is the prime mechanism of evolution by natural selection.

So, as W develops in 'On Certainty' (OC), most of our shared public experience (culture) becomes a true-only extension of our axiomatic EP and cannot be found mistaken without threatening our sanity—as he noted a 'mistake' in S1 (no test) has profoundly different consequences from one in S2 (testable). A corollary, nicely explained by DMS and elucidated in his own unique manner by Searle, is that the skeptical view of the world and other minds (and a mountain of other nonsense) cannot really 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 almost exclusively 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 unconscious 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, 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'), termed Causally Self Referential (CSR) by Searle or reflexive or intransitive in W's 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 and much else here is my idea so don't expect to find it in the literature (except my reviews on Amazon, ArXiv.org, ViXra.org, Academia.edu, Philpapers.org, ResearchGate.net, Citeseer etc.).

Though seldom touched upon by philosophers or other behavioral scientists (e.g., linguists) 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 network of the "cognitive modules", "inference engines", "intracerebral reflexes", "automatisms", "cognitive axioms", "background" or "bedrock" (as W and later Searle call our EP) which must feedback to S1 to move muscles (action).

It follows both from W's 3rd period work and from contemporary psychology, that `will', `self' and `consciousness' (which as Searle notes are presupposed by all discussion of intentionality) are axiomatic true-only elements of S1 composed of perceptions, memories and reflexes., and there is no possibility (intelligibility) of demonstrating (of giving sense to) their falsehood. As W made clear numerous times, they are the basis for judgment and so cannot be judged. The true-only axioms of our psychology are not

evidential. As he famously said in OC 94 — "but I did not get my picture of the world by satisfying myself of its correctness: nor do I have it because I am satisfied of its correctness. -no: it is the inherited background against which I distinguish between true and false."

Evolution by inclusive fitness has programmed the unconscious rapid reflexive causal actions of S1, which typically give rise to the conscious slow thinking of S2, which produces reasons for action that often result in activation of body and/or speech muscles by feedback into S1, causing actions. The general mechanism is via both neurotransmission and by changes in neuromodulators in targeted areas of the brain. The overall cognitive illusion (called by Searle `The Phenomenological Illusion', by Pinker `The Blank Slate' and by Tooby and Cosmides `The Standard Social Science Model') is that S2 has generated the action consciously for reasons of which we are fully aware and in control of, but anyone familiar with modern biology and psychology can see that this view is not credible.

A sentence expresses a thought (has a meaning), when it has clear Conditions of Satisfaction (COS), i.e., public truth conditions. Hence the comment from W: " When I think in language, there aren't `meanings' going through my mind in addition to the verbal expressions: the language is itself the vehicle of thought." And, if I think with or without words, the thought is whatever I (honestly) say it is as there is no other possible criterion (COS). Thus, W's aphorisms (p132 in Budd's lovely book on W) – "It is in language that wish and fulfillment meet and like everything metaphysical, the harmony between thought and reality is to be found in the grammar of the language." And one might note here that `grammar' in W can usually be translated as EP or LSR (DPHOT) 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.

Though W is correct that there is no mental state that constitutes meaning, 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 PNC 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." 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 was TOM (Theory of Mind), or as I prefer UA (Understanding of Agency). Ian Apperly, who is carefully analyzing UA1 and UA2 (i.e., UA of S1 and S2) in experiments, has recently become aware 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 ¾ of a century in the case of some of W's teachings), I have never seen anything approaching an adequate discussion in philosophy or other behavioral science texts and commonly there is barely a mention.

Now that we have a reasonable start on the Logical Structure of Rationality (the Descriptive Psychology of Higher Order Thought) laid out we can look at the table of Intentionality that results from this work, which I have constructed over the last few years. It is based on a much simpler one from Searle, which in turn owes much to Wittgenstein. I have also incorporated in modified form tables being used by current researchers in the psychology of thinking processes which are evidenced in the last 9 rows.

It should prove interesting to compare it with those in Peter Hacker's 3 recent volumes on Human Nature. I offer this table as an heuristic for describing behavior that I find more complete and useful than any other framework I have seen and not as a final or complete analysis, which would have to be three dimensional with hundreds (at least) of arrows going in many directions with many (perhaps all) pathways between S1 and S2 being bidirectional. Also, the very distinction between S1 and S2, cognition and willing, perception and memory, between feeling, knowing, believing and expecting etc. are arbitrary--that is, as W demonstrated, all words are contextually sensitive and most have several utterly different uses (meanings or COS). Many complex charts have been published by scientists but I find them of minimal utility when thinking about behavior (as opposed to thinking about brain function). Each level of description may be useful in certain contexts but I find that being coarser or finer limits usefulness.

The Logical Structure of Rationality (LSR), or the Logical Structure of Mind (LSM), the Logical Structure of Behavior (LSB), the Logical Structure of Thought (LST), the Logical Structure of Consciousness (LSC), the Logical Structure of Personality (LSP), the Descriptive Psychology of Consciousness (DSC), the Descriptive Psychology of Higher Order Thought (DPHOT), Intentionality-the classical philosophical term.

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)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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 Prior Intentions

*** Searle's Intention In Action

**** Searle's Direction of Fit

***** Searle's Direction of Causation

****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly calls 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 brain states), and this is why it's not possible to reduce higher order behavior to a system of laws, which would have to state all the possible contexts –hence Wittgenstein's warnings against theories. This is a special case of the irreducibility of higher level descriptions to lower level ones that has been explained many times by Searle, Daniele Moyal-Sharrock (DMS), P.M.S. Hacker, Wittgenstein 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 space-time. 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, that can be described in PLG's, in which the mind automatically fits (presents) the world (is Causally Self Reflexive--Searle) -- the unquestionable, true-only, axiomatic basis of rationality over which no control is possible).

Preferences, Desires, and Intentions are descriptions of slow thinking conscious Voluntary Abilities— that can be described in SLG's-- in which the mind tries to fit (represent) the world. Behaviorism and all the other confusions of our default descriptive psychology (philosophy) arise because we cannot see S1 working and describe all actions as 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.

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

ACTIONS (I am making X True) : Acting, Speaking , Reading, Writing, Calculating, Persuading, Showing, Demonstrating, Convincing, Doing Trying, Attempting, Laughing, Playing, Eating, Drinking, Crying, Asserting (Describing, Teaching, Predicting, Reporting), Promising , Making or Using Maps, Books, Drawings, Computer Programs–these are Public and Voluntary and transfer Information to others so they dominate over the Unconscious, Involuntary and Informationless S1 reflexes in explanations of behavior (The Phenomenological Illusion, The Blank Slate or the 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 algorithmatized by Rott(1999), Spohn etc.

Intentionality (cognitive or evolutionary psychology) consists of various aspects of behavior which are innately programmed into cognitive modules which create and require consciousness, will and self, and in normal human adults nearly all except perceptions and some memories are purposive, require public acts (e.g., language), and commit us to relationships in order to increase our inclusive fitness (maximum expected utility or Bayesian utility maximization). 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 inclinational verbs such as "I believe" normally describe my ability to predict my probable acts based on knowledge (i.e., S2) but can also seem (in philosophical contexts) to be descriptive of my mental state and so not based on knowledge or information (W and see my review of the book by Hutto and Myin). In the former S1 sense, it does not describe a truth but makes itself true in the act of saying it --i.e., "I believe it's raining" makes itself true. That is, disposition verbs used in first person present tense can be causally self-reflexive--they instantiate themselves but then they are not testable (i.e., not T or F, not S2). However past or future tense or third person use--"I believed" or "he believes" or "he will believe' contain or can be resolved by information that is true or false, as they describe public acts that are or can become verifiable. Likewise, "I believe it's raining" has no information apart from subsequent actions, even for me, but "I believe it will rain" or "he will think it's raining" are potentially verifiable public acts displaced in spacetime that intend to convey information (or misinformation).

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

and NON-Attitudinal functioning of the hinges (axioms, algorithms) of our Evolutionary Psychology (Moyal-Sharrock after Wittgenstein).

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

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

it uninteresting to do so then W has hit the mark.

In spite of the efforts of W and others, it appears to me that most philosophers or linguists 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. They often excel at ultrafine dissections of language use but they miss the realities of how sentences work in everyday life. It is not merely failing to see the forest for the trees, but not seeing the tree because of concentrating on such detailed descriptions of the bark (e.g., the late Gordon Baker).

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 and so of any real framework for behavior. W is easily the most widely discussed modern philosopher with about one new book and dozens of articles largely or wholely 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 and of most behavioral scientists except Chomsky, Pinker and a few others. Searle is perhaps next among modern philosophers and Read, etc., are very prominent with dozens of books and hundreds of articles, talks and reviews. But CDC, other metaphysicians and most behavioral researchers ignore them and the thousands who regard their work as critically important. Consequently, the powerful W/S framework (as well by and large of that of modern research in thinking) is totally absent and all the confusions it has cleared away are abundant. If you read my reviews and the works themselves, perhaps your view of most writing in this arena may be quite different. But as W insisted, one has to work the examples through oneself. As often noted, his supersocratic trialogue form 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) and my review of it for a nice explanation of Private Language and everything by Read et al for getting to the roots of these issues as few do.

CDC eschew the use of 'I' since it assumes the existence of a higher self. The very act of writing, reading and all the language and concepts of anything whatsoever 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 third 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, though of course

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. See e.g., my review of Carruther's recent 'The Opacity of Mind'.

But, 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.

And, 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). 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 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 Carruthers' "Opacity of Mind" (the 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."

And many of W's comments come to mind. He noted 82 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 almost a century ago in TLP 5.1361.

And again, so apropos here is his famous comment (PI p308) about the origin of the philosophical problems about mental processes (and all philosophical problems). The first 'innocent' step in the discussion is the fatal one as it commits us to an incoherent point of view. To paraphrase W, Carruthers talks about processes and states but leaves their nature open. Later we will figure them out, but this is what commits us to a particular way of looking at things and a solution never materializes. So, he has to deny 'mind', 'self', 'will'. 'consciousness' etc.

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 scientistic (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

And likewise, he has 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 all 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 scientistic 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-(see Dictionary.com). But philosophy is not a waste of time-done rightly, it is the *best* way to spend time. How else can we understand 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 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, 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 two 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"—Horwich 'Wittgenstein's Metaphilosophy'.

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

So, this is the general framework I think is essential to all description of higher order thought including philosophy, linguistics, pragmatics, semantics, psychology, anthropology, law, literature, political science, history, sociology etc. It is also clear that the differentiation of these disciplines is somewhat arbitrary, especially pragmatics and semantics which are, by and large, meaningless or at best useless terms. It is defensible that one might subtitle this work 'Developments of Wittgenstein's Contextualism', but of course this term has inevitably been corrupted by philosophers. One might then say that pragmatics and semantics are parts of or coextensive with epistemology and ontology and the descriptive psychology of higher order thought (Searle's Logical Structure of Rationality) or that they describe how we use noises in specific contexts to give them meaning --i.e., a true or false (propositional) use which Searle calls their Conditions of Satisfaction.

Review of The Mind's I by Douglas Hofstadter and Daniel Dennett (1981)

Michael Starks

ABSTRACT

A mixed bag dominated by H & D's reductionist nonsense. This is a follow-up to Hofstadter´s famous (or infamous as I would now say, considering its unrelenting nonsense) Godel, Escher, Bach (1980). Like its predecessor, it is concerned largely with the foundations of artificial intelligence, but it is composed mostly of stories, essays and extracts from a wide range of people, with a few essays by DH and DD and comments to all of the contributions by one or the other of them. For my views on the attempts of D and H to understand behavior see my review of Hofstadter's " I am a Strange Loop. "

Much of it is very reductionistic in tone (i.e., " explains " everything in terms of physics/math and denies " reality " of psychology) but as Hofstadter notes, the quantum field equations of a water molecule are too complex to solve (and so is a vacuum)and nobody has a clue about how to explain the way properties emerge (e.g., water properties from H2 and 02) as you go up the scale from the vacuum to the brain, so reductionism, like holism, requires a great deal of faith and in fact is incoherent as one cannot even frame it's arguments without presupposing the coherence of higher order thought. Additional problems for reductionism are the uncertainty principle, chaos (e.g., no way to predict how a pile of sand will fall), the logically necessary incompleteness of math (and all thought) and the impossibility of matching higher order behaviors (e.g., language) with lower order phenomena (e.g., biochemistry), i.e., the combinatorial explosion or underdetermination. In sum, though there are many interesting comments, like nearly all writing on behavior, this work lacks any coherent account of the logical structure of rationality, which I try to give in my writings.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while my socio-political writings can be found in Suicidal Utopian Delusions in the 21st Century: Philosophy, Human Nature and the Collapse of Civilization--Articles and Reviews 2006-2017 (2017).

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Like all books, this can be usefully viewed as a psychology text, though none of the authors realize this. It is about human behavior and reasoning—about why we think and act the way we do. But (like all such discussion until recently), none of the 'explanations' are really explanations (and not even descriptions) of what we are interested in (higher order behavior of linguistic System 2). People are not clear about separating the 'mental mechanisms' involved, which can be neurophysiological (System 1 and biochemistry) or psychological (System 2). In fact, like most ´explanations` of behavior the texts here and the comments by DH and DD are often more interesting for what kinds of things they accept (and omit) as 'explanations' than for the actual content. As with all reasoning and explaining, one now wants to know which of the brain's inference engines are activated to produce the authors biases and results. It is the relevance filters which determine what sorts of things we can accept as appropriate data for each inference engine and their automatic and unconscious operation and interaction that determines what we can accept as an answer. This is standard terminology from evolutionary psychology so if that's not familiar you may wish to do some reading. I recommend Buss's "Handbook of Evolutionary Psychology 2nd ed" and the newest edition of his text on EP, and Boyer's "Religion Explained", which I have also reviewed.

Cognitive and evolutionary psychology are still not evolved enough to provide full explanations (though following Wittgenstein we should say "descriptions"), but an interesting start has been made. Boyer´s `Religion Explained` shows what a modern scientific description of human behavior looks like. Pinker´s `How the mind Works` is a good general survey.

We now recognize that art, music, math, language and religion are all results of the automatic functioning of the inference engines. This is why

we can expect similarities and puzzles and inconsistencies or incompleteness and often, dead ends. It is now the dominant view that the brain has no general intelligence, but numerous specialized modules or inference engines, each of which works on certain aspects of some problem and the results are then added. Hofstadter, like everyone, can only generate or recognize explanations that are consistent with the operations of his own inference engines, which were evolved to deal with such things as resource accumulation, coalitions in small groups, social exchanges and the evaluation of the intentions of other persons. It is amazing they can produce art or music or math and not surprising that figuring out how they themselves work together to produce overall intelligence or consciousness or choice is way beyond reach nearly 30 years later.

The article on Turing (and many others) left me thinking- ´Oh where is Wittgenstein when we need him! ´ Turing attended W´s lectures on the foundations of math but he did not understand the most basic points (not surprising, as few have even to this day). As W so famously said, decades before this book was written--`Philosophy is the battle against the bewitchment of our intelligence by means of language`(or we might now say by the brain´s inference engines) and it is a battle that H and D have lost. Wittgenstein is one of the most original and influential thinkers of all time and commented incisively on all the major issues in this book, but there no awareness of this in the writings of either of them. He explained in detail how the language games of simulation (e.g., Turing test of computer thinking), imitation, pretense, belief, etc., are parasitic on innately programmed social acts (NOT mental states!) of knowing and understanding. We are told (p94) that we ´believe´ in other minds (try disbelieving—e.g., look at your child or even your dog and think 'this is just a robot', or imagine you step on its foot and it howls and you think it's doing that for the same reason noise comes out of the radio when you turn it on), and that we treat others as black boxes--- but only the mentally ill or autistic do that (ask yourself how we know that). It is only computers that we treat as black boxes and about which we might have beliefs concerning their interior processes. H stopped writing such books

after this one until his recent disaster "I am a Strange Loop", but D continues to this day (2017) to produce treatises full of the same basic confusions (as do thousands of others).

By far the best philosophical article in the book is John Searle´s famous `Minds, Brains and Programs` in which he introduces the Chinese room argument, which shows why computer programs don´t think (NOT why they cannot ever be designed to think--he continues to point out to this day that WE are examples of computing devices that think!). DD and DH offer superficial and arrogant criticisms, but Searle is now widely regarded as a top living philosopher and the Chinese room is probably the most famous philosophical debate of the last 100 years. It would have saved them alot of embarrassment if they had just offered to let Searle coedit the book, or at least rebut their comments.

Nagel´s lovely `What is it like to be a bat` shows that we don´t have any idea what an answer is like, nor how to even try to find one. In this respect, it's quite similar to Searle´s comments on AI--nobody to this day has any idea what a program mimicking 'thinking' would be like, nor even how to go about making one and Wittgenstein showed us the subtleties of the language game of 'thinking' and other dispositional verbs as I describe in detail in my recent writings.

Some say neural nets and fuzzy logic are like the brain, but what is the evidence? Searle has made similar comments in his criticisms of those like Dennett, who claim to explain consciousness (e.g., see `The Mystery of Consciousness`) and the same applies to free will, causality, perception etc. So far as I can see, neither this book nor GEB, nor any of their others, further the study of mind, in the sense of the descriptive psychology of higher order thought, in any way. See my quotes from P.M.S. Hacker elsewhere for congruent thoughts of the most eminent Wittgensteinian. We did not then and do not now (i.e., 25 years after this book was published) know how to scientifically conceptualize thinking (or consciousness, uncertainty, entanglement, wave/particle duality, free will etc.)—i.e., how to play the language games using these words, nor even

how to recognize what such an 'explanatory' concept (i.e., a satisfactory language game with clear Conditions of Satisfaction--COS) would be. But DD and DH did not get the point then, nor subsequently.

DH has new (since GEB) speculations on how music, art, math and programs may map onto each other but they don´t seem to go anywhere. He has some new Q & A sessions, so extensively used in GEB, but they seem to leave only questions and on the key issue of how programs might be like thinking, the only convincing reply is that of Searle--we don´t even know how to conceptualize the difference. So, DH winds up just as lost as DD `Maybe, just like beauty, the sound `I` denotes nothing at all` (p456). If ´I´ means nothing then so do all other words. DD says the Chinese room aims to refute materialism and that it fails as an argument because the room is too slow--both clearly untrue. And now, after 40 years of philosophizing (e.g., in `Consciousness Explained` and in `Freedom Evolves`), he repeats the same mistakes that Wittgenstein pointed out 70 years ago.

We ought to consider it extremely odd that any philosopher should think he can answer empirical questions. Thinking, feeling, perceiving, choosing, etc. are phenomena of the world like any others and we can investigate them in various ways. But how can anyone investigate them by thinking? A philosopher cannot answer questions about genetics, chemistry or physics, but when it comes to the realm of mind, consciousness, perception, free will, causality, reality, they feel qualified--why? Like all behavior, we now look at the operations of the inference engines to see why they make us think like this. Is it the operations of the intuitive psychology and social mind engines that forces them to deny the reality of the very things they are investigating (e.g., thinking, consciousness, choice)?

H makes a glaringly stupid remark --comparing LSD effects to a bullet through the brain (p412). By 1981 millions of people had taken LSD and there were hundreds of books and thousands of articles and numerous films showing that it was precisely its ability to specifically trigger

emotions, memories, images, intellectual and visual fantasies etc. that gives it such great therapeutic power and interest.

They attempt (p403) an explanation of mirror reversal, but in spite of this and Ned Block´s article (J. Phil p259-77. 1974) and even one by Feynman, I think the only complete explanation is that found in the book and article by British psychologist Richard Gregory.

Because of the wide range of famous writers represented, this book is still well worth reading. Where else can you find Turing, Searle´s Chinese room, Nagel's famous `What is it like to be a bat? ` and several xlnt selections from Sci Fi writer Stanislaw Lem?

Perhaps the bottom line here is that 25 years of research in AI and programming by tens of thousands of people with billions of dollars have failed to produce a program that can perceive and respond like a 3 monthold baby, or a robot with the realworld intelligence of an ant, though recently there have been huge advances. Cognitive psychology is slowly exposing the inference engines that make it possible and one day, probably, we can mimic them with a program. Even so, it is not clear we will find it useful to call it thinking. The problem is that almost nobody in this book has a clue about how language (largely equivalent to mind, as Wittgenstein made clear) works and so they just repeat the errors of 2500 years of philosophy.

See my recent review of Ray Kurzweil's 'How to Create a Mind', at the end of this volume, which provides an update on this discussion.

Review of Radicalizing Enactivism by Hutto and Myin (2012)

Michael Starks

ABSTRACT

Probably the leading exponent of Wittgenstein's ideas on the language games of inner and outer (the 'Two Selves' operation of our personality or intentionality or EP etc.) the prolific Daniel Hutto's approach is called 'Radical Enactivism' and is well explained in numerous recent books and papers. It is a development of or version of the Embodied Mind ideas now current and, cleansed of its jargon, it is a straightforward extension of W's 2nd and 3rd period writings (though Hutto seems only intermittently aware of this).

The basic idea of the Embodied Mind or Enactivism is that much of behavior is automated and does not involve representations (basically S2 dispositions-see Hutto's lovely dissection of the 'representation rats nest' in his online papers). To me this is just another way of stating the fact that System 1 precedes the operation of System 2 which is a standard feature of contemporary psychology, which I have explained above and in further detail in my reviews of Wittgenstein (hereafter W-who was the first to see this and explored it in great detail) and Searle (hereafter S-who called it The Phenomenological Illusion in his superb essay of this name in his book Philosophy in a New Century, which I have also reviewed). Since these are basic incontrovertible facts of animal behavior and I have already discussed them I won't dwell on it here.

This book is a sustained argument against other similar ways of describing behavior which he calls CEC and CIC in favor of REC (Radical Embodied Cognition), which he characterizes as "the strongest reading of the embodiment thesis—one that uncompromisingly maintains that basic cognition is literally constituted by, and to be understood in terms of concrete patterns of environmental situated organismic activity, nothing more or less"

(p11). This is clear as a bell if you understand the two systems view explained above but likely opaque if you don't. Much clearer is Fodor's characterization which he quotes as "abilities are prior to theories", that "competence is prior to content" and that "knowing how is the paradigm cognitive state and it is prior to knowing that" (p10). That is, the unconscious automatisms of S1 are evolutionarily and behaviorally prior to the slow conscious dispositions of S2.

This is classic Hutto high-level philosophical dialog, which is quite elegant, but somewhat too dense and a tad pretentious for the rest of us. I have not before encountered his coauthor Myin so can't say how much of this text is really due to him. It is clear from this and the rest of Hutto's work that (like everyone else) he has not quite kept up with the latest work in psychology nor really grasped the full power of W or S, even though he is one of the top Wittgensteinians alive and as bright as anyone in the field. His discussions of the language games of "information" and "representation" in his other papers and books (and much else including his deconstructions of Dennett and Fodor) should be required reading for anyone interested in behavior. So, I have the greatest respect for him, but one hopes that he will mellow with time and write descriptions of behavior (i.e., all we can really do as philosophers according to W) in more mundane prose such as this lovely summation on p15. "Hence, REC is nothing less than a fundamental rethinking of the very foundations of standard approaches to cognitive science and philosophy of mind." Yes, and what a pity that this great Wittgensteinian (and everyone else) does not realize that W laid it all out with unmatched clarity in his third period works over 60 years ago.

I have much less sympathy for the extended and scaffolded minds of Chap 7. I don't see how one can lay the burden of explaining how the 'mind' works at Searle's door, nor how the convoluted prose about "decoupled contentful activities" etc. helps at all. Why not just say that automated unconscious prelinguistic S1 feeds deliberate, conscious linguistic S2, which is axiomatically extended by public language into the myriad wonders of culture? Beginning and end of story.

Their last chapter is about “regaining consciousness,” but I would say that if one has understood Wittgenstein and Searle, one has never lost it. And, though this is an excellent book by two of the brightest and the best, I suggest mulling over my thoughts in this and other reviews and reading Johnston and the latest from Searle, along of course with as much of 3rd period W as feasible, is an even better filter for folly. In sum an excellent book with various faults which I try to correct.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while my socio-political writings can be found in Suicidal Utopian Delusions in the 21st Century: Philosophy, Human Nature and the Collapse of Civilization--Articles and Reviews 2006-2017 (2017).

"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

"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)

"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." Wittgenstein 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." Wittgenstein PI 126

"What we are supplying are really remarks on the natural history of man, not curiosities; however, but rather observations on facts which no one has doubted and which have only gone unremarked because they are always before our eyes." Wittgenstein RFM I p142

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

"The greatest danger here is wanting to observe oneself." LWPP1, 459

"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 (this has to do with the Kantian solution to the problem of philosophy)." Wittgenstein CV p10 (1931)

“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

“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 satisfactions, it turns out that all intentionality is a matter of propositions." Searle PNC p193

"Cognitive systems don't 'pick up' or 'take in' any informational contents; there are no such things as informational contents to take in." Hutto RE pxvi

Before commenting in detail on Radicalizing Enactivism (RE) I will first offer some comments on philosophy (descriptive psychology) and its relationship to contemporary psychological research as exemplified in the works of Searle (S) and Wittgenstein (W), since I feel that this is the best way to place any commentator on behavior in proper perspective.

Wittgenstein is for me easily the most brilliant thinker on human behavior. His work as a whole shows that all behavior is an extension of innate true-only axioms and that our conscious ratiocination (now called System 2) (S2) emerges from unconscious machinations (System 1) (S1). See "On Certainty"(OC) for his final extended treatment of this idea-and my review thereof for preparation. His corpus can be seen as the foundation for all description of animal behavior, revealing how the mind works and indeed must work. The "must" is entailed by the fact that all brains share a common ancestry and common genes and so there is only one basic way they work, that this necessarily has an axiomatic structure, that all higher animals share the same evolved psychology based on inclusive fitness, and that in humans this is extended into a personality (a cognitive or phenomenological illusion) based on throat muscle contractions (language) that evolved to manipulate others (with variations that can be regarded as trivial).

All of W's and S's work as a development of or variation on these ideas. Another major theme here, and of course in all discussion of human behavior, is the need to separate the genetically programmed automatisms, which underlie all behavior, from the effects of culture. Though few philosophers, psychologists, anthropologists, sociologists etc., explicitly discuss this in a comprehensive way, it can be seen as the major problem they are dealing with. I suggest it will prove of the greatest value to consider all study of higher order behavior as an effort to tease apart not only fast and slow thinking (e.g., perceptions and other automatisms vs. dispositions- S1 and S2--see below), but nature and nurture.

Because there is only ONE human psychology (for the same reason there is only ONE human cardiology), anyone accurately describing behavior must be voicing some variant or extension of what W and S have said and they should be easily translatable into one another. If not, one should be discarded and in my view that will rarely be W or S.

What W laid out in his final period (and throughout his earlier work in a less clear way) are the foundations of evolutionary psychology (EP), or if you prefer, psychology, cognitive linguistics, intentionality, higher order thought

or just animal behavior. Sadly, almost nobody seems to realize that his works are a 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 more or less understood him, have not realized the extent of his anticipation of the latest work on EP and cognitive illusions (Theory of Mind, framing, the two selves of fast and slow thinking etc., -- see below). Searle's work as a whole provides a stunning description of higher order social behavior that is possible because of 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.

Long before Searle, W rejected the idea that the Bottom Up approaches of physiology, experimental psychology and computation (e.g., Behaviorism, Functionalism, Strong AI, DST, CTM, etc.) could reveal what his Top Down deconstructions of Language Games (LG's) did. The principal difficulties he noted are to understand what is always in front of our eyes (we can now see this as obliviousness to System 1 (roughly what S calls 'the phenomenological illusion') and to capture vagueness ("The greatest difficulty in these investigations is to find a way of representing vagueness" LWPP1, 347).

As with his other aphorisms, I suggest one should take seriously W's comment that even if God could look into our mind he could not see what we are thinking--this should be the motto of the Embodied Mind and, as S makes clear, of Cognitive Psychology. But God could see what we are perceiving and remembering and our reflexive thinking and acting, since these S1 functions are always causal mental states while S2 dispositions are only potentially CMS. I claim this is not a theory but a fact about our grammar and our physiology. S muddies the waters here because he sometimes refers to dispositions as mental states as well, but as W did long ago, he shows that the language of causality just does not apply to the higher order emergent S2 descriptions—again not a theory but a description about how language (thinking) works.

Some of W's favorite topics in his later second and his third periods are the different (but interdigitating) LG's of fast and slow thinking (System 1 and 2 or roughly Primary Language Games (PLG's) and Secondary Language Games (SLG's) of the Inner and the Outer--see e.g., Johnston-'Wittgenstein: Rethinking the Inner' on how confusing the two is a major industry in philosophy and psychology (but it's a universal mistake we all make), the impossibility of private language and the axiomatic structure of all behavior. Verbs like 'thinking', 'seeing' first described S1 functions but as S2 evolved they came to be applied to it as well, leading to the whole mythology of the inner resulting from e.g., trying to refer to imagining as if it were seeing pictures inside the brain. The PLG's are utterances by and descriptions of our involuntary, System 1, fast thinking, mirror neuron, true only, nonpropositional, mental states- our perceptions and memories and involuntary acts (including System 1 Truths and UOA1 (Understanding of Agency 1) and Emotions1- such as joy, love, anger) which can be described causally, while the evolutionarily later SLG's are expressions or descriptions of voluntary, System 2, slow thinking, mentalizing neurons, testable true or false, propositional, Truth2 and UOA2 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 just 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--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 true-only axioms, most thoroughly explored in 'On Certainty', are W's (and later S's) "bedrock" or "background" i.e., evolutionary psychology, which are traceable to the automated true-only reactions of bacteria and their descendants (e.g., humans), which evolved and operate by the mechanism of inclusive fitness (IF)--see Bourke's superb "Principles of Social Evolution".

W insisted that we should regard our analysis of behavior as descriptions rather than explanations, but of course these too are complex language games and one person's description is another's explanation. Beginning with their innate true-only, nonempirical (automated and nonchangeable) responses to the world, animals extend their axiomatic understanding via deductions into further true only understandings ("theorems" as we might call them, but this is a complex language game even in the context of mathematics).

Tyrannosaurs and mesons become as unchallengeable as the existence of our two hands or our breathing. This dramatically changes one's view of human nature. Theory of Mind (TOM) is not a theory at all but a group of true- only Understandings of Agency (UOA --a term I devised 10 years ago) which newborn animals (including flies and worms if UOA is suitably defined) have and subsequently extend greatly (in higher eukaryotes). However, as I note here, W made it very clear that for much of intentionality there are System 1 and System 2 versions (language games)-the fast unconscious UOA1 and the Slow conscious UOA2 and of course these are heuristics for multifaceted phenomena. Although the raw material for S2 is S1, S2 also feeds back into S1— higher cortical feedback to the lowest levels of perception, memory, reflexive thinking that is a fundamental of psychology. Many of W's examples explore this two way street (e.g., see the discussions of the duck/rabbit and 'seeing as' in Johnston).

I think it is clear that the innate true-only axioms W is occupied with throughout his work, and almost exclusively in his last work `On Certainty', 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 he has no idea W laid out the framework some 75 years ago), which is involuntary and unconscious and which corresponds to the mental states of perception (including UOA1) and memory and involuntary acts, as W notes over and over in endless examples. 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 (or not in the same sense), and do not have any definite time of occurrence and/or duration. But disposition words like "knowing", "understanding", "thinking", "believing", which W discussed extensively, have at least two basic uses. One is a peculiar 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'), and the S2 one, which is their normal use as dispositions, which can be acted out, and which can become true or false (`I know my way home').

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 presumably not ever of slow System 2 dispositional thinking only, since any System 2 thought or intentional action cannot occur without involving much of the intricate network of "cognitive modules", "inference engines", "intracerebral reflexes", "automatisms", "cognitive axioms", "background" or "bedrock" (as W and later Searle call our EP).

Finally, let me suggest that with this perspective, W is not obscure, difficult or irrelevant but scintillating, profound and crystal clear, that he writes aphoristically and telegraphically because we think and behave that way, and that to miss him is to miss one of the greatest intellectual adventures possible.

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

The Logical Structure of Rationality (LSR), or the Logical Structure of Mind (LSM), the Logical Structure of Behavior (LSB), the Logical Structure of Thought (LST), the Logical Structure of Consciousness (LSC), the Logical Structure of Personality (LSP), the Descriptive Psychology of Consciousness (DSC), the Descriptive Psychology of Higher Order Thought (DPHOT), Intentionality-the classical philosophical term.

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)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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 Prior Intentions

*** Searle's Intention In Action

**** Searle's Direction of Fit

***** Searle's Direction of Causation

****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly called this causally self- referential.

******* Tversky/Kahneman/Frederick/Evans/Stanovich defined cognitive systems.

******** Here and Now or There and Then

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

Those wishing a comprehensive up to date account of Wittgenstein, Searle and their analysis of behavior from the modern two systems view may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language as Revealed in Wittgenstein and Searle (2017).

I have commented previously on Hutto in my review of his "Wittgenstein and the End of Philosophy." Probably the leading exponent of W's ideas on the language games of inner and outer (the 'Two Selves' operation of our personality or intentionality or EP etc.) the prolific Daniel Hutto's (DH) approach is called 'Radical Enactivism' and is well explained in numerous recent books and papers. It is a development of or version of the Embodied Mind ideas now current and, cleansed of its jargon, it is a straightforward extension of W's 2nd and 3rd period writings (though Hutto seems only intermittently aware of this). He is also author of the best deconstructions I know of Dennett's preposterous claim to be following in W's footsteps (in fact Dennett is just repeating most of the classic mistakes in grandiose fashion and hasn't a clue about W) and of Fodor's LOT and other nonsense. But of course, one must read Searle too and the title of his famous review of Dennett's book says it well "Consciousness Explained Away". Incidentally, unlike most philosophers and other scholars, who make little or no effort to give the general public access to their papers, Hutto has put nearly every paper (though of course often just proofs and not the final paper) free online at www.academia.edu.

The basic idea of the Embodied Mind or Enactivism is that much of behavior is automated and does not involve representations (basically S2 dispositions- see Hutto's lovely dissection of the 'representation rats nest' in his online papers above). To me this is just another way of stating the fact that System 1 precedes the operation of System 2 which is a standard feature of contemporary psychology, which I have explained above and in further detail in my reviews of Wittgenstein (who was the first to see this and explored it in great detail) and Searle (who called it The Phenomenological Illusion in his superb essay of this name in his book Philosophy in a New Century which I have also reviewed). Since these are basic incontrovertible facts of animal behavior and I have already discussed them I won't dwell on it here.

This book is a sustained argument against other similar ways of describing behavior which he calls CEC and CIC in favor of REC (Radical Embodied Cognition), which he characterizes as "the strongest reading of the embodiment thesis—one that uncompromisingly maintains that basic cognition is literally constituted by, and to be understood in terms of concrete patterns of environmental situated organismic activity, nothing more or less" (p11). This is clear as a bell if you understand the two systems view explained above but likely opaque if you don't. Much clearer is Fodor's characterization which he quotes as "abilities are prior to theories", that "competence is prior to content" and that "knowing how is the paradigm cognitive state and it is prior to knowing that" (p10). That is, the unconscious automatisms of S1 are evolutionarily and behaviorally prior to the slow conscious dispositions of S2.

This is classic Hutto high level philosophical dialog, which is quite elegant, but somewhat too dense and a tad pretentious for the rest of us. I have not before encountered his coauthor Myin so can't say how much of this text is really due to him. It is clear from this and the rest of Hutto's work that (like everyone else) he has not quite kept up with the latest work in psychology nor really grasped the full power of W or S, even though he is one of the top Wittgensteinians alive and as bright as anyone in the field. His discussions of the language games of "information" and "representation" in his other

papers and books (and much else including his deconstructions of Dennett and Fodor) should be required reading for anyone interested in behavior. So, I have the greatest respect for him, but one hopes that he will mellow with time and write descriptions of behavior (i.e., all we can really do as philosophers according to W) in more mundane prose such as this lovely summation on p15. "Hence, REC is nothing less than a fundamental rethinking of the very foundations of standard approaches to cognitive science and philosophy of mind." Yes, and what a pity that this great Wittgensteinian (and everyone else) does not realize that W laid it all out with great (and unmatched) clarity in his third period works over 60 years ago.

And again "By giving pride of place to embodied habits and skills when it comes to explaining how sophisticated mentality emerges, REC denies CIC accounts of the same. REC's credo—that 'we act before we think' –is an outright denial of the CIC thesis that 'we must think in order to act'" (p12). As noted above we are dealing here with the two senses of mentalizing verbs, or as I suggest Thinking 1 and Thinking 2. If not identical with CIC, Phenomenology is at least quite similar and so one really ought to read Searle's "The Phenomenological Illusion" at this point and of course all of W3 (third period W) but there is no hint of this here. Finally, for anyone who still is confused "Enactivists are concerned to defend the view that our most elementary ways of engaging with the world and others—including our basic forms of perception and perceptual experience—are mindful in the sense of being phenomenally charged and intentionally directed, despite being non-representational and content free. Defending this understanding of basic mentality is the primary aim of this book" (p13).

This leads to his accepting Dretske's idea that experiencing things (i.e., qualia such as redness) is (in my terms) a representational function of S2—i.e., dispositional (propositional) and hence true or false and conscious and slow, in contrast to S1 which is reflexive, non-representational, fast and true only.

Throughout Chap 3 he promotes the fast, automated reflexive behaviors of S1 (i.e., REC) over the representational, content possessing ones of S2 (i.e.,

instructionalism or intellectualism), but never quite gets around to using this common modern terminology. E.G., p49 top and p50 bottom. As always, one must be constantly aware of the quite different language games played with 'conscious', 'cognitive', reflexive, 'representation', 'information', 'computation', 'subpersonal', 'automatic', 'contents', 'function', etc., which are typically used by both pros and amateurs as if their meanings were uniform and obvious. As one digs into the discussion on p59 et seq. it is good to have in mind Searle's lucid differentiations of observer independent intrinsic intentionality and functions thatconscious creatures have, vs. observer dependent ascribed intentionality and functions which we may attribute to the rest of nature (for a capsule summary see my recent review of his Philosophy in a New Century, which also delves into the related issues of 'syntax is not semantics' and 'structure (e.g., regularity) is not syntax').

Inevitably we run into the multifarious LG's of 'information' (p62 etc.) which has drastically different uses and often refers to the true only (not really info bearing in the normal sense) non-propositional mechanisms of S1, but is commonly taken to mean the true or false content bearing propositional statements of S2 which is what he says flat out on p67. Naturally he quotes Dretske's classic book on this. It seems Dretske's most recent article on info is in the 30th Intl. Wittgenstein Symposium, which you can page capture and print direct from Amazon or GoogleBooks, but it's got little to say, and the main reason to view that volume is to get Rodych's latest article on W's mathematics. H&M recommend giving up on info as content and adhering to info as covariance so that one can distinguish info processing "action oriented representations" (i.e., S2 higher order dispositional thought) from info sensitive (i.e., S1 reflexive response). If contentful properties can't be reduced to physical properties then "…the explanatory project of naturalism with respect to them would be quite different—it would be to discover the set of fundamental bridging laws that explain how contentful properties relate to basic physical properties. That would be the only way to solve what we might call the Hard Problem of Content." Yes, we all want to know how S1 (teleosemiotics) gives rise to S2 (teleosemantic intensionality) or, to put it another way, mind arises from matter.

They quote Jacobs: "In all of these cases it is not unreasonable to assume that the informational relation holds between an indicator and what it indicates (or a source) independently of the presence of an agent with propositional attitudes". Mindful of S's classic discussions, we realize that Jacobs is talking about derived intentionality and hence concepts of info that have nothing to do with human behavior. So, they are forced to conclude that "There is no naturally occurring contentful information that can be "used and fused" to from inner representations. Unless we assume that pre-existing contents exist to be received through sensory contact, the last thread of the analogy between basic cognitive systems and genuinely communications systems breaks down at a crucial point. (p70)"

And once again: "Taking an even stronger line on this holds that the interpretative response does all the work. This would surrender any commitment to the idea that informational content exists independently of the activities of cognitive agents." (p74) Quite so! And so vanish Fodorian qualms about Darwin (p80) and his and Strawson's Hyperintellectualism (p90).

That is, no bridge from S1 to S2 at least via info. How about some Wittgensteinian therapy here?

"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." Zettel p312

But if we accept that the simple explanations we can give now are the only ones possible, what about philosophy and neurophysiology? Nothing about them—they will ever long for a completion they cannot attain. At least this is my take on things.

And finally: "This is to accept that organisms often act successfully by making appropriate responses to objects or states of affairs in ways that are only

mediated by their sensitive responding to natural signs, where this responding does not involve contentfully representing the objects or states of affairs in question (p81)." In my words, the automatic unconscious reflexive operation of S1 undergirds all behavior. When they note that perceptual experiences (i.e., S1 mental states) "…do not attribute properties to the world. Consequently, they do not have built in conditions of satisfaction, nor do they possess veridical content, possess content that is true or false." These true only S1 qualities ensuing from our axiomatic psychology, and their generation of the higher order thought of S2, are exactly what W discoursed upon so brilliantly at the end of his life (but it seems H&M, along with everyone else, have no idea).

Not only does the idea that the mental perceptual states of S1 are conceptual get the boot, but they might claim that "…the very nature of such perceptual content debars the possibility of ever fully or exhaustively capturing its essence by means of conceptual descriptive characterization (p97)." Inner states are what they are and since there is no private language and no way in the public one to describe them in a really satisfying way-- they will always remain "qualia". But I think (and am pretty sure W would take the view) that "stabbing pain", "bright red", "green apple tree" and "galloping horses" are as good as it gets—that is, there is no useful meaning that can ever be given to "exhaustively capturing its essence". As good as H&M are, I am afraid they have fallen into the classic philosopher's trap so beautifully described by W. They reach the limits of language, so naturally they want to go beyond them. One can say or write anything, but one cannot mean anything. Must it not be either true or false that 7432 occurs in the decimal expansion of PI? As W showed, your intuition often leads you astray.

Before reading the next few pages on Gauker's Assumptions and nonintensional, nonpropositional, nonconceptual "content" (i.e., S1) it will be useful to read Searle's old paper on unconscious intentionality (Phil Issues 1:45-66(1991)) which shows how S1 generates S2 "…the ontology of the unconscious is strictly the ontology of a neurophysiology capable of generating the conscious" as well as Johnston's classic book 'Wittgenstein: Rethinking the Inner' (or at least my review of it), -- especially the material

on indeterminacy of language. And of course, to the list of those rejecting the propositionality of perception one should add W who anticipated them in detail by some 60 years and provided in his last period the good news (to balance the bad on p103) that S1 is the true-only axiomatic foundation of S2—that is, of all higher order behavior and so of course these *aliefs* are not revisable (p104, 105). And, since S1 is prelinguistic, it is hardly surprising that there "…is no conceptual content of perception to express" (p100).

They are much exercised in Chap 6 to show that perceptual science, and illusions in particular, provide no evidence of representations or content in S1 and I applaud their conclusion that "…it is not clear what 'possessing content' really amounts to, or what work it is meant to do that couldn't be done just as easily by assuming that human beings share basic and content-free ways of responding directly to certain worldly solicitations and offerings." That is, S1 is automated as modern biology and psychology shows.

I have much less sympathy for the extended and scaffolded minds of Chap 7. I don't see how one can lay the burden of explaining how the mind works at Searle's door, nor how the convoluted prose about "decoupled contentful activities" etc. helps at all. Why not just say that automated unconscious prelinguistic S1 feeds deliberate, conscious linguistic S2, which is axiomatically extended by public language into the myriad wonders of culture? Beginning and end of story.

Their last chapter is about "regaining consciousness," but I would say that if one has understood Wittgenstein and Searle, one has never lost it. And, though this is an excellent book by two of the brightest and the best, I suggest mulling over my thoughts in this and other reviews and reading Johnston and the latest from Searle, along of course with as much of 3rd period W as feasible, is an even better filter for folly.

His second book with Myin 'Evolving Enactivism' will appear in 2017 and I have ordered my copy almost a year in advance.

Review of The Stuff of Thought by Steven Pinker (2008)

Michael Starks

ABSTRACT

I start with some famous comments by the philosopher (psychologist) Ludwig Wittgenstein because Pinker shares with most people (due to the default settings of our evolved innate psychology) certain prejudices about the functioning of the mind and because Wittgenstein offers unique and profound insights into the workings of language, thought and reality (which he viewed as more or less coextensive) not found anywhere else. The last quote is the only reference Pinker makes to Wittgenstein in this volume, which is most unfortunate considering that he was one of the most brilliant and original analysts of language.

In the last chapter, using the famous metaphor of Plato's cave, he beautifully summarizes the book with an overview of how the mind (language, thought, intentional psychology) –a product of blind selfishness, moderated only slightly by automated altruism for close relatives carrying copies of our genes--works automatically, but tries to end on an upbeat note by giving us hope that we can nevertheless employ its vast capabilities to cooperate and make the world a decent place to live.

Pinker is certainly aware of but says little about the fact that far more about our psychology is left out than included. Among windows into human nature that are left out or given minimal attention are math and geometry, music and sounds, images, events and causality, ontology (classes of things), dispositions (believing, thinking, judging, intending etc.) and the rest of intentional psychology of action, neurotransmitters and entheogens, spiritual states (e.g, satori and enlightenment, brain stimulation and recording, brain damage and behavioral deficits and disorders, games and sports, decision theory (incl. game theory and behavioral economics), animal behavior (very

little language but a billion years of shared genetics). Many books have been written about each of these areas of intentional psychology. The data in this book are descriptions, not explanations that show why our brains do it this way or how it is done. How do we know to use the sentences in their various way (i.e., know all their meanings)? This is evolutionary psychology that operates at a more basic level –the level where Wittgenstein is most active. And there is scant attention to context.

Nevertheless, this is a classic work and with these cautions is still well worth reading.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

"If God looked into our minds he would not be able to see there whom we were thinking of."

"Ought the word "infinite" to be avoided in mathematics? Yes: where it appears to confer a meaning upon the calculus; instead of getting one from it." RFM revised edition (1978) p141

"Time and again the attempt is made to use language to limit the world and set it in relief—but it can't be done. The self-evidence of the world expresses itself in the very fact that language can and only does refer to it. For since language only derives the way in which it means, its meaning, from the world, no language is conceivable that does not represent this world." Wittgenstein Philosophical Remarks S47

"The limits of my language mean the limits of my world" TLP

I start with these famous comments by the philosopher (psychologist) Ludwig Wittgenstein (W) because Pinker shares with most people (due to the default settings of our evolved innate psychology) certain prejudices about the functioning of the mind and because Wittgenstein offers unique and profound insights into the workings of language, thought and reality (which he viewed as more or less coextensive) not found anywhere else. The last quote is the only reference Pinker makes to Wittgenstein in this volume, which is most unfortunate considering that he was one of the most brilliant and original analysts of language.

Another famous Wittgensteinian dictum is "Nothing is Hidden." If one dips into his work sufficiently, I think he makes it very clear what this means—that our psychology is in front of us all the time if we only open our eyes to see it and that no amount of scientific work is going to make it clearer (in fact it just gets more and more obscure). This is not antirational or antiscientific but it just states what he sees as the facts—a soccer game is out on the field – not in our head--and we understand perfectly well the motivations, anxieties, stresses and disappointments of the players and what effort is required to play and how the ball moves when kicked. Immense advances have been made in sports physiology, anatomy, bioenergetics, physics math and chemistry. Whole books full of equations have been written about how balls move thru the air and muscles apply force to move bones; about how muscle movements originate in part of the cortex, are mirrored in the brains of others; mountains of literature on motivation, personality, brain function and modeling. Has this given us any more insight into a soccer game or changed our experience of playing or watching?

Intentionality (rationality) has been evolved piecemeal from whatever tools (genes) animals had to work with and so is full of paradoxes and illusions. Just as we see mirages in the desert or read words into sentences that are not there, and see animated blobs on a screen "causing" others to move and "helping" or "hindering"', we look for thinking and believing in the head and confuse our innate psychological axioms with empirical facts (e.g., regarding math and geometry as things we "discover" in the world, rather than invent).

In order for the concept and word "reality" to apply to the results we get from the use of differential equations, MRI scanners and particle colliders to a greater degree than or in place of apples, rocks and thunderstorms, it would be necessary for these recent discoveries to have had the same role in natural selection over hundreds of millions of years. It is only survival advantage over eons that selected the genes enabling our distant (invertebrate) ancestors to begin reacting in useful ways to the sights and sounds of the world and ever so slowly to produce brains that could form concepts (thoughts) that eventually were verbalized. Science and culture cannot replace or take preference over our ancient intentional psychology but merely slightly extends or supplements it. But when philosophizing (or doing linguistics!) we are easily misled as context is missing and our psychology automatically dissects every situation for the causes and the ultimate or lowest level of explanation and we substitute that for the gross higher levels because there is nothing in our language rules to prevent it. It comes ever so naturally to say we don't think—our brain does and tables are not solid because physics tells us they are made of molecules. But W reminded us that our concepts of, and words for, thinking, believing and other dispositions are public actions, not processes in the brain, and in what sense are molecules solid? Hence, the quote above, which bears repeating, since I see it as one of the most fundamental ideas we have to get clear about before we can make any progress in the study of behavior.

"Time and again the attempt is made to use language to limit the world and set it in relief—but it can't be done. The self-evidence of the world expresses itself in the very fact that language can and only does refer to it. For since language only derives the way in which it means, its meaning, from the world, no language is conceivable that does not represent this world."

Much of W's writing is examples of the common-sense knowledge that is essential to the success of all animal behavior and by and large not only the behavioral science but even AI, which cannot succeed without it, has been unable to grasp and implement it. Even one of the fathers of AI, Marvin Minsky said (in a 2003 Boston Univ. speech) that "AI has been brain dead since the 70's" and lacked common sense reasoning. But his recent book "The

Emotion Machine" still shows no awareness of the work that W did 75 years ago, and this means no awareness of the contextual, intentional, point of view without which one cannot hope to grasp how the mind (language) works.

When talking about behavior (i.e., thought or language or action) it is a nearly universal mistake to regard the meaning of a word or sentence as attached to it, ignoring the infinite subtleties of context, and thus we go astray. Of course, we cannot include everything about context, as that would make discussion difficult, even impossible, but there is a vast difference between regarding meaning as something that can be fully given by a dictionary entry and meaning as shorthand for a family of complex uses. Even Klein's classic book 'Time in Language' (not cited by Pinker) regards the 'time' as a family of loosely connected uses, though of course he too has no awareness of W, Searle or intentionality.

The point of mentioning this is that Pinker shares the reductionistic biases of most modern scientists and that this colors his approach to behavior in ways that will not be obvious to most readers. As fascinating as his data are and as masterful as his writing is, it subtly leads us to what I think is a mistaken picture of our psychology—a view that is due to the innate biases of our evolved psychology and hence is a universal failing.

Pinker is the Richard Dawkins of psychology—one of the major popularizers of science in modern times. Possibly only the late and most unlamented (he was a self-serving egomaniac who misled millions with his specious reasoning and blank slateism) Stephan Gould sold more volumes of pop sci. It was Pinker's masterful refutation of the universal delusion that human nature is culturally generated (one of Gould's many delusions) that made his previous book 'The Blank Slate' a classic and a top choice for most important books of the 21st century. Incidentally, there are many put-downs of Gould, including some by Pinker and Dawkins ("he has made tilting at windmills into his own personal art form" –as I recall it from a Dawkins review of a Gould tome from the Journal 'Evolution' a decade or so ago), but I think the best is that of Tooby and Cosmides in a letter to the NY Times (search their page or the Times). All of these works are intimately connected by the subject

of animal behavior, evolutionary psychology, and of course 'The Stuff of Thought".

Following convention, Pinker discusses Putnam's famous, but badly flawed, twin earth thought experiment (bizarre thought expts. in philosophy were essentially invented by Wittgenstein), which claims to show that meaning is not in the head, but it was W in the 30's—i.e., 40 years earlier-- who showed decisively that all the dispositions or inclinations (as he called them, though philosophers, lacking acquaintance with his work commonly call them by the incorrect name of propositional attitudes) including meaning, intending, thinking, believing, judging etc. function as descriptions of our actions and not as terms for mental phenomena. They cannot be in the head for the same reason a soccer game cannot be in the head. Later in life Putnam began to take Wittgenstein seriously and changed his tune accordingly.

He makes almost no reference to the large and fascinating literature on behavioral automatisms (i.e., most of our behavior! --see e.g., "Experiments With People'(2004) or Bargh's 'Social Psychology and the Unconscious' (2007) for the older work, and the now (2016) vast and rapidly expanding literature on implicit cognition), which shows that the more you look, the clearer it becomes that actions which we regard as results of our conscious choice are not. People shown pictures or reading stories of old people tend to walk out of the building slower than when give those of young people etc. etc. The well-known placebo effect is a variant where the info is consciously input—e.g., in a 2008 study eighty-five percent of volunteers who thought they were getting a $2.50 sugar pill said they felt less pain after taking it, compared with a 61 percent control group. Such effects can be induced subliminally if the price info is input via images, text or sound. Presumably the same is true of most of our choices.

This brings us to one of my major gripes about this book—it's monomaniacal obsession with the "meaning" of words rather than their use-- a distinction made famous by W in his lectures and some 20 books beginning in the 1930's. Like W's insistence that we do not explain behavior (or the rest of nature) but

only describe it, this may seem like a pointless quibble, but, as usual, I have found as I reflected on these matters over the years that W was right on the mark. He said that a formula which will work most of the time is that the meaning of a word (far better to say a sentence) is its use in language—and this means its public use in a specified context to communicate info from one person to another (and sometimes to another higher mammal—dogs share a major portion of our intentional psychology). I mention this partly because in a previous book Pinker accused W of denying that animals have consciousness (an extraordinary view that is actually defended by some) because he noted that a dog can't think "perhaps it will rain tomorrow", but W's point was the unexceptional one that there are many thoughts that we cannot have without language and that we have no test for interpreting a dog's behavior as showing that it expected something tomorrow. Even if it used an umbrella and invariably got it out of the closet the day before a rain, there is no way to connect this to it's mental state—same for a deaf mute who could not read or write or use sign language. This connects to his famous demonstrations of the impossibility of a private language and to the fact that dispositions are not in the head. W showed how the absence of any public test means that even the dog and the mute cannot know what they are thinking—nor can we, because dispositions are public acts and the act is the criterion for what we thought—even for ourself. This is the point of the quote above—neither God nor neurophysiologists can see thoughts, beliefs, images, hopes in our brain, because they these are terms for acts and neither the vague and fleeting epiphenomena we experience, nor the correlates detectable by brain studies, function in our life in the same way as do the contextual use of the sentences describing these acts. And, regarding animal consciousness, W noted that intentional psychology gets a foothold even in a fly—a point marvelously and increasingly supported by modern genetics, which shows that many genes and processes fundamental to primate behavior got their start at least as early as nematodes (i.e., C. elegans) some billion years ago.

Intentional psychology or intentionality (very roughly our personality or rationality or higher order thought (HOT) is a very old philosophical concept that (unknown to most) was given its modern formulation by Wittgenstein, who, in the 20,000 pages of his nachlass, now mostly translated and published

in some 20 books and several CDROM's, laid the foundations for the modern study of human behavior. Sadly, he was mostly a recluse who did not publish for the last 30 years of his life, never really finished writing anything of his later work and wrote his brilliant and highly original comments on behavior in a style various termed epigrammatic, telegraphic, oracular, Socratic, obscure etc. and all published posthumously over a period of more than 50 years (the famous Philosophical Investigations (PI) in 1953 and the most recent-but not the last!—The Big Typescript in 2005) and thus, though he was recently voted one of the top 5 philosophers of all time, and Philosophical Investigations the most important philosophy book of the 20 century, he is ignored or misunderstood by nearly everyone. The feeling I often get is that our psychology is a coral reef with most people snorkeling on the surface admiring the bumps while Wittgenstein is 20 meters below probing the crevices with scuba gear and flashlight.

Wittgenstein's literary executors were stuffy academics and his books issued mostly from Blackwell with staid academic titles and no explanation whatsoever that they can be seen as a major foundation for the modern study of evolutionary psychology, personality, rationality, language, consciousness, politics, theology, literature, anthropology, sociology, law etc., –in fact everything that we say, think and do since, as he showed, it all depends on the innate axioms of our evolved psychology which we share to a large extent with dogs and to some extent even with flies and C. elegans. Had his works been presented with flashy covers by popular presses with titles like How the Mind Works, The Language Instinct, and The Stuff of Thought, much of the intellectual landscape of the 20 century might have been different. As it is, though he is the major subject of at least 200 books and 10,000 papers and discussed in countless thousands more (including Pinker's How the Mind Works), based on the hundreds of articles and dozens of books I have read in the last few years, I would say there are less than a dozen people who really grasp the significance of his work, as I present it in this and my other reviews.

Those wishing a comprehensive up to date account of Wittgenstein, Searle and their analysis of 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 (2016).

One result of all this (what one philosopher has called "the collective amnesia regarding Wittgenstein") is that students of language including Pinker take Grice's notions such as implicature (which seems just a fancy word for implication) and, more recently, relevance theory, as a framework for "the relation between words and meaning" (of course W would turn in his grave at this phrase since how can they be separable from their use if one follows his meaning is use formula?) but they seem to me feeble substitutes for intentionality as described by W and revised and enlarged by Searle and others. In any case, Grice is the normal soporific academic, Sperber (a leader in relevance theory) tolerable, Pinker engaging and often elegant and even poignant, Searle (see esp. 'Rationality in Action') is clear, rigorous, and quite original (though owing, I think, a very big debt to W) but too academic for the bestseller lists, while Wittgenstein, once you grasp that he is a natural master psychologist describing how the mind works, is very demanding, but brilliantly original and often breathtaking. Pinker writes masterful prose while Wittgenstein writes telegrams, though often moving and poetic ones and on a few occasions, he wrote beautiful essays. Pinker can be mined for some gold, lots of iron and some dross while W is mostly gold, a little iron and hardly a speck of dross. Pinker is mostly summarizing the work of others (though in impeccable style) while W is so original and so bizarre he's way over most people's heads. I suggest reading Pinker, Searle and Wittgenstein alternately or simultaneously with a dash of Sperber, Grice and a few hundred others from time to time.

W said that the problem is not to find the answer, but to recognize that which is always before us as the answer. That is, our language is (by and large) our thought, which is about actual or potential events (including actions by agents such as barking, speaking and writing), and that meaning, contra Pinker and a cast of thousands, is use and nothing is hidden (i.e., language is (mostly) thought).

The ignorance in many quarters is so complete that even an otherwise marvelous recent 358 page book by Wiese on a topic virtually created by Wittgenstein (Numbers, Language and the Human Mind—which I see is cited by Pinker) there is not a single reference to him!

W mostly emphasizes the different uses of the "same" words" (i.e., a splitter) who originally wanted to use the quote "I'll teach you differences!" as the motto of his book PhilosophicaI Investigations. That is, by describing the different uses of sentences (the language games), and by modifying the games in thought experiments, we remind ourselves of the different roles these games play in life and we see the limits of our psychology. But Pinker, again following the seductive defaults of our evolved modules and the egregious examples of thousands of others, is a lumper who often blurs these differences. E.G., he speaks repeatedly of "reality" as though it was a single thing (rather than a whole family of uses). He also speaks of reality as something separate from our experience (i.e., the classic idealist/realist confusion).

But what test is there for reality? He slips (as do we all) so easily into the reductionistic substitution of lower levels for higher ones so we are all inclined to dismiss the thinking that we can see (i.e., actions) for processes in the brain, which our language (thought) cannot possibly be describing, as it evolved long before anyone had any idea of brain functions. If Pinker imagines that you are not really reading this page, e.g., your retina is being hit with photons bouncing off ink molecules etc.) then I respectfully suggest he needs to reflect further on the issue of language, thought and reality and I know of no better antidote to this toxic meme than immersion in Wittgenstein.

Reflecting on Wittgenstein brings to mind a comment attributed to Cambridge Philosophy professor C.D. Broad (who did not understand nor like him) which ran something like 'Not offering the chair of philosophy to

Wittgenstein would be like not offering the chair of physics to Einstein!" I think of Wittgenstein 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 impossible 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, 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.

It seems crushingly obvious that our evolved psychology has been selected to match the world to the maximal extent compatible with our genetic and energetic resources and that is ALL we can say about reality, and we ALL understand this (we LIVE it) but when we stop to think about it, the defaults of our universal psychology take over and we start to use the words (concepts) of "reality," "aspects," "time," "space,", "possible," etc. out of the intentional contexts in which they evolved. The following gem comes from biologists (I take it from Shettleworth's superb but neglected book Cognition, Evolution and Behavior).

"The role of psychology then is to describe the innate features of the minds of different organisms which have evolved to match certain aspects of that physical external universe, and the way in which the physical universe interacts with the mind to produce the phenomenal world. "
O'Keefe and Nadel "The Hippocampus as a Cognitive Map"

Think of it this way—you can look up a word in the dictionary but you cannot look up a use there, unless there was a video which showed before and after the event and all relevant facts about it. The dictionary is like a morgue full of dead bodies. Here lies "rose" and here "run" and here "in" and here "is" and what is missing is life. Add a photo and it's a little better: add a video and lots better: add a long 3D color hires video with sound and smell and its getting there.

Part of Wittgenstein's description of our public psychology included many detailed examples of how the sensations and images in my mind don't carry any epistemic weight even for me. How do I know I am eating an apple? My taste and vision might be wrong and how to decide? But if I talk about it or write it down and you say "that's a tasty looking apple" etc. I have an objective test. Right and wrong get a foothold here.

W was going to use a quote from Goethe as the motto of PI --"In the beginning was the deed." That is, evolutionarily it was perceptions and actions and then memories of them and then thoughts about them and then words voicing the thoughts. So, the event is the thing Australopithecus thought about and

natural selection for being able to make acoustic blasts which substituted for them was strong enough to modify our vocal apparatus and suitable control circuitry at a fantastic pace, so by early Neanderthal time they were talking a blue streak and have not shut up mind or mouth for more than a few minutes since. W understood, as few have, the primacy of actions and the irrelevance of our thoughts, feelings etc. as the foundations of communication, which is why he is often called a behaviorist (i.e., Dennett, Hofstadter, B.F. Skinner style denial of the reality of our mental life, mind, consciousness etc.) but this is patently absurd.

It reminds me of the famous description of Plato of the shadows on the cave wall vs turning around to see people actually using language—an analogy that I never thought of in regard to W and which I was stunned to see a few hours later in Pinker's last chapter. In any case if one considers carefully any case of language use we see that much of our intentional psychology is called into play.

One can see the ignorance of Wittgenstein's work in the articles in EEL2 (the Elsevier Encyclopedia of Language and Linguistics-2nd ed. (2005) 12,353p-yes that's 12 thousand pages in 14 vols and a mere $6000) which is by far the biggest, and one hopes the most authoritative, reference in language studies.

Curiously, Pinker does not have a single reference to it, but you can find it, along with nearly all of Pinker, Searle, Wittgenstein and thousands of others free on the net.

To get a grasp of the basic necessities for AI you might e.g., find it much more interesting to read W's RFM than Minsky's 'The Emotion Machine'. Pinker has referred to Brown's famous list of hundreds of universals of human behavior, but these are nearly all gross higher level behaviors such as the possession of religion, reciprocal altruisms etc. but it large omits hundreds of other universals which underlie these. Wittgenstein was the first, and in some cases perhaps the only one to date, to point out many of the more fundamental ones. However, he did not tell you what he was doing and nobody else has either so you will have to puzzle it out for yourself. Most

people read first (and often nothing else) his Philosophical Investigations but I prefer the more strictly mathematical examples in his Remarks on the Foundations of Mathematics. If you read with the understanding that he is describing the universal axioms of our evolutionary psychology which underlie all our reasoning then his work makes perfect sense and is breathtaking in its ingenuity.

Pinker illustrates how the mind works with the Barbecue Sauce example. There are of course a limitless number of others which illustrate our subjective probability (often called Bayesian reasoning—though he does not mention this). My favorites are Doomsday (see e.g., Bostrum's book or web page), Sleeping Beauty and Newcomb's problem. Unlike Barbecue, which has a clear solution, many others have (depending on your viewpoint) one, none or many. We may regard these as interesting, as they show gaps in or limits to our rationality (a major theme in Wittgenstein) or (what we have known at least since de Finetti's work in the 20's) that all probability is subjective, or like the famous liar paradox or Godel's theorems (see my review of Hofstadter's 'I am a Strange Loop), as trivial demonstrations of the limits of our primate mind, though Pinker does not expand on this issue nor give more than a few hints at the vast literature on decision theory, game theory, behavioral economics, Bayesianism etc.

EEL2 does have a passable short article on W which avoids making too many glaring errors, but it totally misses nearly everything of importance, which, if really understood, would make the article by far the longest one in the book. Nearly the whole thing is wasted on the Tractatus, which everyone knows he totally rejected later and which is extremely confused and confusing as well. Hardly anything on his later philosophy and not a word about the two searchable CDROM's which are now the starting point for all W scholars (and anyone interested in human behavior) which are now becoming widely disseminate via the net. There is also nothing here nor in the articles about Chomsky, innate ideas , evolution of syntax, evolution of semantics, evolution of pragmatics (practically every one of his 20,000 pages has to do with novel ideas and examples on these two), schema theory etc., nor about how he anticipated Chomsky in studying "depth grammar", described the

problem of underdetermination or combinatorial explosion nor a word about his discovery (repeatedly and in detail—e.g., RPP Vol. 2 p20) some 20 years before Wason of the reasons for "glitches" in "if p then q" types of constructions now analyzed by the Wason selection tests (one of the standard tools of EP research), nor about how his work can be seen as anticipating many ideas in evolutionary psychology, about his founding the modern study of intentionality, of dispositions as actions, of the epiphenomenality of our mental life and of the unity of language, math, geometry, music, art and games, nor even an explanation of what he meant by language games and grammar—two of his most frequently used terms. W made the change from trying to understand the mind as a logical, domain general structure to a psychological idiosyncratic domain specific one in the late 20's but Kahneman got the Nobel for it in 2002, for numerous reasons, not the least of which is that they did lab work and statistical analysis (though W was a superb experimentalist and quite good at math). Of course, one cannot fault the EEL2 too much as it merely follows the similar omissions and lack of understanding throughout the behavioral sciences. And, I am not bringing this up in the way one might complain about the absence of info on ancient Chinese war rockets in a book on rocket engines, but because his work is still a virtually untapped mine of behavioral science diamonds, and, for my money, some of the most exhilarating and eye opening prose I have ever read. Nearly anything he has written could be used as a supplementary text or lab manual in any philosophy or psychology class and in much of law, mathematics, literature, behavioral economics, history, politics, anthropology, sociology and of course linguistics. Which brings us back to Pinker.

In the last chapter, using the famous metaphor of Plato's cave, he beautifully summarizes the book with an overview of how the mind (language, thought, intentional psychology) – a product of blind selfishness, moderated only slightly by automated altruism for close relatives carrying copies of our genes--works automatically, but tries to end on an upbeat note by giving us hope that we can nevertheless employ its vast capabilities to cooperate and make the world a decent place to live.

Pinker is certainly aware of but says little about the fact that far more about our psychology is left out than included. Among windows into human nature that are left out or given minimal attention are math and geometry, music and sounds, images, events and causality, ontology (classes of things), dispositions (believing, thinking, judging, intending etc.) and the rest of intentional psychology of action, neurotransmitters and entheogens, spiritual states (e.g., satori and enlightenment, brain stimulation and recording, brain damage and behavioral deficits and disorders, games and sports, decision theory (including game theory and behavioral economics), animal behavior (very little language but a billion years of shared genetics). Many books have been written about each of these areas of intentional psychology. The data in this book are descriptions, not explanations that show why our brains do it this way or how it is done. How do we know to use the sentences in their various ways (i.e., know all their meanings)? This is evolutionary psychology that operates at a more basic level –the level where Wittgenstein is most active. And there is scant attention to context.

Among the countless books not referred to here are Guerino Mazzola's excellent tome investigating the similarity of math and music 'The Topos of Music', Shulgin's amazing work probing the mind with psychochemicals 'Phikal' and 'Tikal'. Many which try to represent mental functions with geometrical or mathematical means such as Rott 'Belief Revision' Gardenfors' various books, and of course the massive efforts going on in logic (e.g. the 20 or so Vol Handbook of Philosophical Logic) as well as many others edited or written by the amazing Dov Gabbay (e.g., 'Temporal Logic'). Re spatial language of the numerous volumes on the psychology, language or philosophy of space, the recent 'Handbook of Spatial Logic' (especially fun are Chap 11 on space-time and the last Chap. by Varzi) stands out. The point is that these logical, geometrical and mathematical works are extensions of our innate axiomatic psychology and so they show in their equations and graphics something about the 'shape' or 'form' or 'function' of our thoughts (modules, templates, inference engines) and so also the shape of those of animals and even perhaps of computers (though one has to think of what test would be relevant here!). And of course, all the works of Wittgenstein, keeping mind that he is sometimes talking about the most basic prelinguistic

or even premammalian levels of thought and perception. Of course, many books on AI, robot navigation and image processing are relevant as they must mimic our psychology. Face recognition is one of our most striking abilities (though even crustaceans can do it) and the best recent work I know is 'Handbook of Face Recognition'. Of the numerous books on space/time one can start with Klein's 'Language and Time' or McLure's 'The Philosophy of Time'. Smith's 'Language and Time', Hawley's 'How Things Persist' and Sider's 'Four- Dimensionalism', Ludlow's 'Semantics, Tense and Time' , Dainton's 'Time and Space'.and 'Unity of Consciousness', Diek's 'The Ontology of Spacetime' and Sattig's 'The Language and Reality of Time''. But as one would expect and as detailed by Rupert Read, the language games here are all tangled up and most the discussions of time are hopelessly incoherent.

And also a good but now dated book covering much of relevance with articles by Searle and others is Vanderveken's 'Logic, Thought and Action'.

Review of The New Science of the Mind by Marc Rowlands (2013)

Michael Starks

ABSTRACT

Before remarking on "The New Science of the Mind", I 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 PNC (Philosophy in a New Century), TLP, PI, OC, Making the Social World (MSW) and other books by and about these geniuses, who provide a clear description of higher order behavior, not found in psychology nor philosophy, that I will refer to as the WS framework.

As with so many philosophy books, we might stop with the title. As the quotes and comments above and in my other reviews and the books they cover indicate, there are compelling reasons for regarding the problems we face in describing the psychology of higher order thought as conceptual and not scientific. This ought to be crystal clear to all, but science envy and almost complete oblivion to WSH etc. is a la mode! But as H notes above, the issues discussed here are all about language games and have nothing to do with science. In fact, as usual, if one translates into plain English there is very little of interest here, and certainly nothing not said before and better by WS etc. countless times since the 30's (see e.g., The Blue and Brown Books from 1933-35). It is not surprising that he makes no significant references to any of the above books or persons (the only reference to S is an article from 1958!), though in my view they are at the top of the list of the major figures in descriptive psychology.

On p119 he tells us that the key to all this is to figure out how "…a personal level cognitive process can belong to a representational subject. This is the task of the second half of the book." But W did this 80 years ago and since we have the beautifully clear explanations of WSH, H&M etc., there is no point

to torturing oneself with the rather aimless and opaque prose that veers off at the end into Sartre, Heidegger, Husserl, and Frege, with a dash of postmodernist word salad for good measure. A valiant effort on an interesting topic, but ultimately exhausting and fruitless.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

"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.” (Blue Book p18, 1933).

"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

"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)

"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 (1931)

"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

"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

"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

These quotes are not chosen at random but (along with the others in my reviews) are an outline of behavior (human nature) from our two greatest descriptive psychologists. In considering these matters we must keep in mind that philosophy is descriptive psychology.

Before remarking on “The New Science of the Mind”, 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 PNC (Philosophy in a New Century), TLP, PI, OC, Making the Social World (MSW) 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. To serve as an heuristic framework I have generated a table which is very useful but no room here (see other reviews such as that of Shoemaker's Physical Realization).

Here is how the 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 directly describable in language, this being possible only with terms that substitute for public behavior (the impossibility of private language). He invented truth tables and predicted the utility of paraconsistent logic. 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 can be viewed as the first evolutionary psychologist since he constantly explained the necessity of the innate background and demonstrated how it generates behavior. He described the psychology behind the Wason test--a fundamental measure used in EP decades later. He noted the indeterminate 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. 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.

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, recognising, 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)

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 or abilities to act), but the logical extensions of S2 into culture (S3).

Searle's work as a whole provides a stunning description of higher order S2/S3 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.

S1 is the simple automated functions of our involuntary, System 1, fast thinking, mirror neuron, true-only, non- propositional, prelinguistic mental states- our perceptions and memories and reflexive acts 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 linguistic functions are expressions or descriptions of voluntary, System 2, slow thinking, mentalizing neurons. That is, of 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 just a fact that attempts to describe System 2 in terms of neurochemistry, atomic physics, mathematics, make no sense--see W, S, Hacker etc.).

Disposition words have at least two basic uses. One is a peculiar 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')--i.e., they are Causally Self Referential (CSR), 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) and are not CSR.

The investigation of System 1 has revolutionized psychology, economics 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 not of S2 only, since it cannot occur without involving much of the intricate S1 network of "cognitive modules", "inference engines", "intracerebral reflexes", "automatisms", "cognitive axioms", "background" or "bedrock" --as W and later S call our Evolutionary Psychology (EP).

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 (S3). I expect this fairly well describes the basic structure of behavior.

So, recognizing that S1 is only upwardly causal (world to mind) and contentless (lacking representations or information) while S2 has content and is downwardly causal (mind to world) (e.g., see my review of Hutto and

Myin's `Radical Enactivism'), I would change 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 COS originating in) the 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 the learned deontic cultural relations of S3, 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).

It follows both from W's 3rd period work contemporary psychology, that `will', `self' and `consciousness' are axiomatic true-only elements of S1 composed of perceptions and reflexes., 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.

Like Carruthers and others, S sometimes 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 demonstrates, 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.

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 DIRA2/3 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 DIRA2/3, 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 (often modified into 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 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/S3 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) "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 higher order descriptive psychology as one can find.

Though W is correct that there is no mental state that constitutes meaning, S 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 in a context that can be true or false and this is an act and not a mental state. 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," or as S says its COS. Hence W's summation (p140 Budd) 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 Potential Events which I accept as fulfilling the COS and my mental states, emotions, change of interest etc. have no bearing on the way dispositions function. 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 and which can only be expressed by reflexive S1 muscle contractions, especially those of speech.

This is another statement of W's argument against private language. Likewise, with rule following and interpretation --they can only be publicly checkable acts. 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 axiomatic psychology which he often calls the background.

W's definitive arguments against introspection and private language are as clear as day—we must have a test to differentiate between A and B and tests can only be public. He famously illustrated this with the 'Beetle in the Box'. I have explained the functioning of dispositional language ('propositional attitudes') and W's dismantling of the notion of introspection above and in my reviews of Budd, Johnston and several of S's books. Basically, he showed that the causal relation and word and object model that works for S1 does not apply to S2.

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) But *real* behaviorism is rampant in its modern 'functionalist', 'computationalist','dynamic systems' forms. See my review of Carruthers' 'The Opacity of Mind' for a recent egregious example.

Behaviorism etc. have no practical impact. Unlike other cartoon views of life, they are 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. Unfortunately, not so with other cartoon theories like SSSM, BS and TPI, widely shared by religions, governments, sociology, anthropology, pop psychology, history, literature, and mom and dad, in spite of well-known facts, such as that personalities of adults adopted as children are as different from those of their adoptive siblings and parents as people chosen randomly off the street. Religions big and small, political movements, and economics often generate or embrace already existing cartoons that ignore physics and biology (human nature), posit forces terrestrial or cosmic that reinforce our superstitions, wishful thinking and selfishness and help to accelerate the destruction of the earth (the real purpose of nearly every social practice). The point is to realize that these fantasies are on a continuum and have the same source. All of us are born with a cartoon view of life and few ever grow out of it. But the world is not a cartoon, so a great tragedy is being played out as the cartoons collide with reality.

In spite of the fact that most of the above has been known to many for decades (and even ¾ of a century in the case of some of W's teachings), I have never seen anything approaching an adequate discussion in behavioral science texts and commonly there is barely a mention.

Now for some comments on "The New Science of the Mind" (NSM).
As with so many philosophy books, we might stop with the title. As the quotes and comments above and in my other reviews and the books they cover indicate, there are compelling reasons for regarding the problems we face in describing the psychology of higher order thought as conceptual and not scientific. This ought to be crystal clear to all, but science envy and almost complete oblivion to WSH etc. is a la mode! But as H notes above, the issues discussed here are all about language games and have nothing to do with science. In fact, as usual, if one translates into plain English there is very little of interest here, and certainly nothing not said before and better by WS etc. countless times since the 30's (see e.g., The Blue and Brown Books from 1933-35—if you don't see the connection with all this try harder). It is not

surprising that he makes no significant references to any of the above books or persons (the only reference to S is an article from 1958!), though in my view they are at the top of the list of the major figures in descriptive psychology.

Rowland wants to discern the precise roles of the 4 E 'aspects' of mind (Enactive, Embodied, Embedded, Extended see p3) with the aim to show that he can combine the Extended and Embodied into the Amalgamated to yield a clear theory of mind. Recall that W insisted that the activities of the mind lie open before us and theories or theses must be replaced by descriptions.

Some sections of the book are reasonably successful at describing the nonsense that passes as philosophy of mind but there is much aimless wandering and many mistakes and confusions, all couched in infelicitous jargon. This will hopefully be obvious to those who read the above and my other reviews as I cannot record more than a few of the comments I made in my two readings of this book. Major flaws, common to most writing in the behavioral sciences, are the lack of awareness of the S1/S2 two selves mode of describing personality that W pioneered (though nobody has noticed), the partial (or perhaps complete) embracing of the mechanical view of mind, and a failure to be clear about nature/nuture issues which the 4 E's seem eager to fuse. The fast, automatic perceptions, 'rules' and behaviors of S1 are mushed together with the slow conscious dispositional thinking, believing and rule following of S2 and neither are clearly or consistently distinguished from the arbitrary cultural behaviors of S3.

Thus, he is severely limited by failing to note clearly the difference between the automatic unconscious 'rules' of S1 perception and reflexive actions and the deliberate conscious 'rules' of S2 thinking and understanding, both innate, and the arbitrary learned S3 rules that constitute the cultural veneer on behavior. S2 rule following is just dispositional behavior of understanding propositions with COS. He says things somewhat like this (e.g., see p116, but not in clear and consistent terms and I doubt many will be able to wade thru it with any good results.

It fails anywhere to make it clear that thinking, believing etc. are dispositions, hence propositional and true or false S2 functions and, like all dispositions, have clear meaning due to their *public outer* Conditions of Satisfaction and not to any *private internal* phenomena. This is another demonstration of the impossibility of private language and introspection and contrary to its supposed complexity, it is a simple fact that there can be no such thing as a private test to determine the truth of any statement. This is the major topic of the fine books by Budd and Johnston—the Inner phenomena that we experience vs the Outer behavior that constitutes language and social interaction. That is why this can be seen as a poor man's version of W's Inner and Outer watered down and smothered in jargon. If one thinks that where there's smoke, there's fire, then please see Hutto and Myin's book for a razor-sharp account of the 4 E's but someone who understands the critical need to differentiate the various LG's of 'information', 'representation', 'content' etc. and why none of these can be part of S1. Yes, the brain can only express itself via the muscles of mouth, arms and legs and yes, it is thus unavoidable that S2 dispositions can only be manifested in public acts like speech and movement—that is, in the WS framework they have Conditions of Satisfaction (COS). "I am driving to Ohio" has to be said and heard and yes it needs a car, a road and the cognitive act of driving and if you like you can call these these external embodiments, enactive, embedded or extended aspects of mind, but exactly what is achieved? It is the most trivial of truisms that our mind needs a brain and the brain a body and the body a world but what is useful about including the car, the gas, the engine, the road and Ohio as part of cognition? Yes, in some sense they are all signs or creations of intentionality since created by us, but how about the trees, birds and clouds? Only theists could be happy with that. We inherit our genes, biochemistry, physiology, anatomy and abilities (e.g., dispositions such as thinking) but not the car in any useful sense and certainly not the clouds, and isn't this the crucial thing? The 4 E's and Rowlands' Amalgamated Mind seem to want to fuse dispositions with intentions and actions and results and the world (see p127-129) and look a lot like back door attempts to merge nature and nurture, a return to blank slateism and TPI. Not a happy ending.

W destroyed the mechanical or reductionist, computationalist, behaviorist, functionalist, Strong AI view of mind (yes, they seem to be different, but the mistakes are pretty much the same) and for those who didn't get it, S, H and many others carried on. Nevertheless, these incoherencies continue to dominate cognitive science and philosophy. Rowlands says he will mostly avoid functionalism, yet if he realized its bankruptcy why bring it up again and again, and he tells us p103 that the extended mind (one of the two pillars of his theory) is "predicated on a liberal conception of functionalism" and in detail on p100 and 104 how they go hand in hand.

Rowlands' discussion of cognitive bloat (p128 etc.) makes reference to S's "underived" content but his only ref to S's work is over 50 years old. Since then S has called this "intrinsic intentionality" that includes all of S1 and S2 (i.e., all cognition) and which contrasts with "derived" or "ascribed" which is ascribed by us to machines and other artifacts and events and is of course NOT intentionality (cognition or psychology). In this sense animals have only intrinsic and not ascribed intentionality. But he seems to get this sense of derived mixed up with his sense in which it refers to the personal level S2, as opposed to the nonderived or subpersonal level S1 (see p117-19). If you want to be *really* serious about your laptop being asleep and awake, and the car and the road being part of the mind, then cognition will extend into the universe, at least when doing philosophy, but it will not in this sense (except maybe in bizarre, rare, amusing or quite scary cases) enter into nor have any impact at all on *real life.* So, for me the 4 E's as presented here are just more cartoon views of life.

In contrast, the almost mathematically precise Radical Enactivism of Hutto and Myin only insists on the fact that S1 blends into the world as our perceptions, memories and reflex actions are automatic, unconscious, prelinguistic, contentless, informationless and without representation. Only the slow, conscious S2 dispositions fed by S1 have information, content and representation (COS). If you insist to apply these terms to S1 as well then please differentiate I1, C1, R1, COS1 etc from I2, C2, R2, COS2 etc. for reasons I have mentioned above and in many other reviews.

On p119 he tells us that the key to all this is to figure out how "…a personal level cognitive process can belong to a representational subject. This is the task of the second half of the book." But W did this 80 years ago and since we have the beautifully clear explanations of WSH, H&M etc., there is no point to torturing oneself with the rather aimless and opaque prose that veers off at the end into Sartre, Heidegger, Husserl, and Frege, with a dash of postmodernist word salad for good measure.

A valiant effort on an interesting topic, but ultimately exhausting and fruitless.

Endless Incoherence— A Review of Shoemaker's Physical Realization (2009)

Michael Starks

ABSTRACT

Over 40 years ago I read a small grey book with metaphysics in the title which began with the words "Metaphysics is dead. Wittgenstein has killed it." I am one of many who agree but sadly the rest of the world has not gotten the message. Shoemaker's work is nonsense on stilts but is unusual only in that it never deviates into sense from the first paragraph to the last. At least with Dennett, Carruthers, Churchland etc. one gets a breath of fresh air when they discuss cognitive science (imagining they are still doing philosophy). As W showed so beautifully, the confusions that lead to metaphysics are universal and nearly inescapable aspects of our psychology. They occur not only in all thinking on behavior but throughout science as well. It's easy to find examples in Hawking, Weinberg, Penrose, Green, who of course have no idea they have left science and entered metaphysics, that the statement they just made is not a matter of fact at all but a matter of conceptual (linguistic) confusion. "Law, event, space, time, force, matter, proof, connection, cause, follows, physical", etc., all have clear uses in certain technical contexts, but these blend insensibly into quite different uses that have little in common but the spelling.

Since it is pointless to waste time deconstructing Shoemaker line by line, showing the same errors over and over, I will describe some facts about how our psychology (language) works and with this outline and the references I give it is quite straightforward to give a meaningful description of the world in place of the metaphysical fantasies. If I were to debate Shoemaker we would never get beyond the title.

Horwich gives one of the most beautiful summaries of where an understanding of Wittgenstein leaves us that I have ever seen.

"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."

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

"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." Blue Book p18 (1933)

"The decisive movement in the conjuring trick has been made, and it was the very one we thought quite innocent." Wittgenstein, PI p308

"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

"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)

"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 (1931)

"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

"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

"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

"He who understands baboon would do more towards metaphysics than Locke" Darwin 1838: Notebook M

These quotes are not chosen at random but (along with the others in my reviews) are an outline of behavior (human nature) from our two greatest descriptive psychologists. In considering these matters we must keep in mind that philosophy (in this context) is descriptive psychology.

Over 40 years ago I read a small grey book with metaphysics in the title which began with the words "Metaphysics is dead. Wittgenstein has killed it." I am one of many who agree but sadly the rest of the world has not gotten the message. Shoemaker's work is nonsense on stilts but is unusual only in that it never deviates into sense from the first paragraph to the last. At least with Dennett, Carruthers, Churchland etc. one gets a breath of fresh air when they discuss cognitive science (imagining they are still doing philosophy). As W showed so beautifully, the confusions that lead to metaphysics are universal and nearly inescapable aspects of our psychology. They occur not only in all thinking on behavior but throughout science as well. It's easy to find examples in Hawking, Weinberg, Penrose, Green, who of course have no idea they have left science and entered metaphysics, that the statement they just made is not a matter of fact at all but a matter of conceptual (linguistic) confusion. "Law, event, space, time, force, matter, proof, connection, cause, follows, physical", etc., all have clear uses in certain technical contexts, but these blend insensibly into quite different uses that have little in common but the spelling.

Since it is pointless to waste time deconstructing Shoemaker line by line, showing the same errors over and over, I will describe some facts about how our psychology (language) works and with this outline and the references I give it is quite straightforward to give a meaningful description of the world in place of the metaphysical fantasies. If I were to debate Shoemaker we would never get beyond the title. As noted above "The decisive movement in the conjuring trick has been made, and it was the very one we thought quite innocent." The trick is already apparent in the title and if we let that slip the nonsense will never stop. "Physical realization" can be taken many ways and most of the time it is being used here in very peculiar ones. Likewise, for

many other words, and W saw these tricks and dissected them in great detail beginning mainly in the Blue and Brown Books and continuing for the next 20 years.

Here is how the 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 directly describable in language, this being possible only with terms that substitute for public behavior (the impossibility of private language). He invented truth tables and predicted the utility of paraconsistent logic. 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 can be viewed as the first evolutionary psychologist

since he constantly explained the necessity of the innate background and demonstrated how it generates behavior. He described the psychology behind the Wason test--a fundamental measure used in EP decades later. He noted the indeterminate 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. 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.

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, recognising, 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)

I will offer some comments on philosophy and its relationship to contemporary psychological research as exemplified in the works of Searle (S) and Wittgenstein (W). It will help to see my reviews of PNC (Philosophy in a New Century), TLP, PI, OC, Making the Social World (MSW) and other books by and about these two geniuses, who provide a clear description of higher order behavior, not found in psychology books, that I will refer to as the WS framework.

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

Each level of description may be useful in certain contexts but I find that being coarser or finer limits usefulness.

The Logical Structure of Rationality (LSR), or the Logical Structure of Mind (LSM), the Logical Structure of Behavior (LSB), the Logical Structure of Thought (LST), the Logical Structure of Consciousness (LSC), the Logical Structure of Personality (LSP), the Descriptive Psychology of Consciousness (DSC), the Descriptive Psychology of Higher Order Thought (DPHOT), Intentionality-the classical philosophical term.

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)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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 Prior Intentions

*** Searle's Intention In Action

**** Searle's Direction of Fit

***** Searle's Direction of Causation

****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly called this causally self- referential.

******* Tversky/Kahneman/Frederick/Evans/Stanovich defined cognitive systems.

******** Here and Now or There and Then

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

Those wishing a comprehensive up to date account of Wittgenstein, Searle and their analysis of 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 (2016).

A major theme in all discussion of human behavior (e.g. metaphysics etc) 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 or abilities to act), but the logical extensions of S2 into culture (S3).

Searle's work as a whole provides a stunning description of higher order S2/S3 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.

S1 is the simple automated functions of our involuntary, System 1, fast thinking, mirror neuron, true-only, non- propositional, prelinguistic mental states- our perceptions and memories and reflexive acts 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 linguistic functions are expressions or descriptions of voluntary, System 2,

slow thinking, mentalizing neurons. That is, of 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 just a fact that attempts to describe System 2 in terms of neurochemistry, atomic physics, mathematics, make no sense--see W, S, Hacker etc).

Disposition words have at least two basic uses. One is a peculiar 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')--i.e., they are Causally Self Referential (CSR), 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) and are not CSR.

The investigation of System 1 has revolutionized psychology, economics 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 not of S2 only, since it cannot occur without involving much of the intricate S1 network of "cognitive modules", "inference engines", "intracerebral reflexes", "automatisms", "cognitive axioms", "background" or "bedrock" --as W and later S call our Evolutionary Psychology (EP).

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 (S3). I expect this fairly well describes the basic structure of behavior.

So, recognizing that S1 is only upwardly causal (world to mind) and

contentless (lacking representations or information) while S2 has content and is downwardly causal (mind to world) (e.g., see my review of Hutto and Myin's `Radical Enactivism'), I would change 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 COS originating in) the 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 the learned deontic cultural relations of S3, 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).

It follows both from W's 3rd period work contemporary psychology, that `will', `self' and `consciousness' are axiomatic true-only elements of S1 composed of perceptions and reflexes., 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.

Like Carruthers and others, S sometimes 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 demonstrates, 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.

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 DIRA2/3 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 DIRA2/3, 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 (often modified into 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 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/S3 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) "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 higher order descriptive psychology as one can find.

Though W is correct that there is no mental state that constitutes meaning, S 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 in a context that can be true or false and this is an act and not a mental state.
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," or as S says its COS. Hence W's summation (p140 Budd) 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 Potential Events which I accept as fulfilling the COS and my mental states, emotions, change of interest etc. have no bearing on the way dispositions function. 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 and which can only be expressed by reflexive S1 muscle contractions, especially those of speech.

This is another statement of W's argument against private language. Likewise, with rule following and interpretation --they can only be publicly checkable acts. 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 axiomatic psychology which he often calls the background.

W's definitive arguments against introspection and private language are as clear as day—we must have a test to differentiate between A and B and tests can only be public. He famously illustrated this with the 'Beetle in the Box' as noted p191 of WAP. I have explained the functioning of dispositional language ('propositional attitudes') and
W's dismantling of the notion of introspection above and in my reviews of Budd, Johnston and several of S's books. Basically, he showed that the causal relation and word and object model that works for S1 does not apply to S2.

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) But *real* behaviorism is rampant in its modern 'functionalist', 'computationalist','dynamic systems' forms. See my

review of Carruthers' 'The Opacity of Mind' for a recent egregious example. Behaviorism etc. have no practical impact. Unlike other cartoon views of life, they are 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. Unfortunately, not so with other cartoon theories like SSSM, BS and TPI, widely shared by religions, governments, sociology, anthropology, pop psychology, history, literature, and mom and dad, in spite of well-known facts, such as that personalities of adults adopted as children are as different from those of their adoptive siblings and parents as people chosen randomly off the street. Religions big and small, political movements, and economics often generate or embrace already existing cartoons that ignore physics and biology (human nature), posit forces terrestrial or cosmic that reinforce our superstitions, wishful thinking and selfishness and help to accelerate the destruction of the earth (the real purpose of nearly every social practice). The point is to realize that these fantasies are on a continuum and have the same source. All of us are born with a cartoon view of life and few ever grow out of it. But the world is not a cartoon, so a great tragedy is being played out as the cartoons collide with reality.

In spite of the fact that most of the above has been known to many for decades (and even ¾ of a century in the case of some of W's teachings), I have never seen anything approaching an adequate discussion in behavioral science texts and commonly there is barely a mention. This is truly sad, but it is absolutely scandalous that the same is true of nearly all philosophy texts.

Review of Freedom Evolves by Daniel Dennett (2003)

Michael Starks

ABSTRACT

``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`` ´ This quote is from Ludwig Wittgenstein who redefined philosophy some 70 years ago (but most people have yet to find this out). Dennett, though he has been a philosopher for some 40 years, is one of them. It is also curious that both he and his prime antagonist, John Searle, studied under famous Wittgensteinians (Searle with John Austin, Dennett with Gilbert Ryle) but Searle got the point and Dennett did not, (though it is stretching things to call Searle or Ryle Wittgensteinians). Dennett is a hard determinist (though he tries to sneak reality in the back door), and perhaps this is due to Ryle, whose famous book ´The Concept of Mind´(1949) continues to be reprinted. That book did a great job of exorcising the ghost but it left the machine. Dennett enjoys making the mistakes Wittgenstein, Ryle (and many others since) have exposed in detail. Our use of the words consciousness, choice, freedom, intention, particle, thinking, determines, wave, cause, happened, event (and so on endlessly) are rarely a source of confusion but as soon as we leave normal life and enter philosophy (and any discussion detached from the environment in which language evolved) chaos reigns. Like most Dennett lacks a coherent framework-which Searle has

called the logical structure of rationality. I have expanded on this considerably since I wrote this review and my recent articles show in detail what is wrong with Dennett's approach to philosophy. Let me end with another quote from Wittgenstein--´Ambition is the death of thought´.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

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"Philosophy is a battle against the bewitchment of our intelligence by means of language".

"Ambition is the death of thought"

These three quotes are from Ludwig Wittgenstein, who redefined philosophy some 70 years ago (but most people have yet to find this out). Dennett, though he has been a philosopher for some 40 years, is one them. It is also curious that both he and his prime antagonist, John Searle, studied under famous Wittgensteinians (Searle with John Austin, Dennett with Gilbert Ryle)

but Searle at least partially got the point and Dennett did not. Dennett is a hard determinist (though he tries to sneak reality in the back door), and perhaps this is due to Ryle, whose famous book ´The Concept of Mind´(1949) continues to be reprinted. That book did a great job of exorcising the ghost but it left the machine. Dennett enjoys making the mistakes Wittgenstein, Ryle (and many others since) have exposed in detail. By accident, just before this book, I had read ´´The Minds I´´, which Dennett coauthored with Douglas Hofstadter in 1981. They made some bad mistakes (see my review), and saddest of all, they reprinted two famous articles that pointed the way out of the mess--- Nagel´s `What is like to be a bat?` and an early version of John Searle´s Chinese Room argument explaining why computers don´t think.

Nagel pointed out that we do not even know how to recognize what a concept of a bat´s mind would be like. Searle similarly explained how we lack a way to conceptualize thinking and how it differs from what a computer does (e.g., it can translate Chinese without understanding it). Likewise, we lack a clear test for recognizing what counts as good vs bad--or just intelligible-- for many philosophical and scientific concepts. Our use of the words consciousness, choice, freedom, intention, particle, thinking, determines, wave, cause, happened, event (and so on endlessly) are rarely a source of confusion but as soon as we leave normal life and enter philosophy (and any discussion detached from the environment in which language evolved) so, chaos reigns. Wittgenstein was the first to understand why and to point out how to avoid this.

Unfortunately, he died in his prime, his works are composed almost entirely of a series of examples of how the mind (language) works, and he never wrote any popular books, so understanding of his work is restricted to a very few.

Searle is one of the world´s leading philosophers and has written many extremely clear and highly regarded articles and books, some of which have pointed out the glaring defects in Dennett´s work. His review ``Consciousness Explained Away´´ of Dennett's 1991 book `´Consciousness Explained´´ and his book ´´The Mystery of Consciousness´´ are very well known, and show, in a way that is amazingly clear for philosophical writing,

why neither Dennett (nor any of the hundreds of philosophers and scientists who have written on this topic) have come close to explaining the hard problem—i.e., how do you conceptualize consciousness. Many suspect we will never be able to 'conceptualize' any of the really important things (though I think W made it clear that they are mixing up the very hard scientific issue with the very simple issue of how to use the word), but it is clear that we are nowhere near it now as a scientific issue. My own view is that the scientific issue is straightforward as we can see 'consciousness' being put together a few neurons at a time by evolution and by development. And the 'concept' is a language game like any others and one just needs to get clear (specify clear COS) about how we will use the word.

Dennett has mostly ignored his critics but has favored Searle with vituperative personal attacks. Searle has been accused by Dennett and others of being out to destroy cognitive psychology which is quite funny, as modern philosophy is (mostly) a branch of cognitive psychology, and Searle has made it very clear for 30 years that WE are a good example of a biological machine that is conscious, thinks, etc. He just points out that we don´t have any idea how this happens. Searle characterizes as ´´intellectual pathology´´, the views of Dennett and all those who deny the existence of the very phenomena they set out to explain.

Dennett repeats his mistakes here and leaves his reply to his critics to the penultimate page of the book, where we are told that they are all mistaken and it is a waste of space to show how! Unsurprisingly, there is not one reference to Wittgenstein or Searle in the entire book. There are however, many references to other old school philosophers who are as confused as he is. It is scientism writ large—the almost universal mistake of mixing together the real empirical issue of science with the issues of how the language is to be used (language games) of philosophy.
Like most people, it does not cross his mind that the very inference engines he thinks with are forcing him to come to certain conclusions and that these will often be quite unconnected with or wrong about the way things are in the world. They are a jumble of evolutionary curiosities which do various tasks in organizing behavior that were useful for survival hundreds of

thousands of years ago. Wittgenstein was a pioneer in doing thought experiments in cognitive psychology and began to elucidate the nature of these engines and the subtleties of language in the 30´s, and thus he made the sorts of comments that this review begins with.

Dennett says (p98) that his view is compatibilism, i.e., that free will (which I hope, for coherence, we can equate with choice) is compatible with determinism (i.e., that ´´there is at any instant exactly one physically possible future´´--p25). He wants to show that determinism is not the same as inevitability.

However, the whole book is smoke and mirrors by means of which choice, in the sense we normally understand it, disappears and we are left with ``choice``, which is something we cannot choose. Naturally, this echoes the fate of consciousness in his earlier book ``Consciousness Explained``.

It is remarkable that, at a time when we are just beginning to reach the point where we might be able to understand the basics of how a single neuron works (or how an atom works for that matter), that anyone should think they can make the leap to understanding the whole brain and to explain its most complex phenomena. Please recall the last sentence of Wittgenstein from the opening quote: ´´ And what´s more, this satisfies a longing forthe transcendent, because, insofar as people think they can see `the limits of human understanding´, they believe of course that they can see beyond these.`` The relation between language, thought and reality is extraordinarily complex and everyone gets lost. If one is very, very careful, we can lay out the language games (e.g., specify the Conditions of Satisfaction of various statements using the words consciousness and mind) and clarity becomes possible, but Dennett throws caution to the winds and we are dragged into the quicksand.

There are at least 3 different topics here (evolution of our brain, choice and morality) and Dennett tries vainly to weld them together into a coherent account of how freedom evolves from the deterministic crashing of atoms. There is, however, no compelling reason to accept that bouncing atoms (or

his favorite example, the game of life running on a computer) are isomorphic with reality. He knows that quantum indeterminacy (or the uncertainty principle) is a major obstacle to determinism, however defined (and has been taken by many as an escape to freedom), but dismisses it due to the fact that such events are too rare to bother with. By extension, it's unlikely that any such event will happen now or even in our whole lifetime in our brain, so we appear to be stuck with a determined brain (whatever that may be). However, the universe is a big place and it's been around a long time (perhaps 'forever') and if even one such quantum effect occurs it would seem to throw the whole universe into an indeterminate state. The notion ´´there is at any instant exactly one physically possible future´´ cannot be true if at any instant, a quantum indeterminacy can occur--in this case there would seem to be infinitely many possible futures. This recalls one of the escapes from the contradictions of physics—each instant our universe is branching into infinitely many universes.

He correctly rejects the idea that quantum indeterminacy gives us the answer to how we can have choice. This obvious idea has been suggested by many but the problem is that nobody has any idea how to specify an exact sequence of steps which starts with the equations of physics and ends up with the phenomena of consciousness (or any other emergent phenomenon). If so, they will definitely win at least one Nobel Prize, for not only will they have 'explained' consciousness, they will have 'explained' (or much better 'described' as Wittgenstein insisted) the universal phenomenon of emergence (how higher order properties emerge from lower ones). So, they would have to solve the ´easy´ problem (to determine the exact state of the brain corresponding to some mental state and preferably specify the exact position of all the atoms in the brain over time-ignoring uncertainty) and the ´hard´ one (what exactly correlates with or produces consciousness or choice etc.?). And while they are at it how about also doing the impossible--an exact and full solution to the quantum field equations for a brain. It is very well known that these equations are uncomputable, even for one atom or a vacuum, as it would require an infinite amount of computer time. But infinite will do for one atom so maybe a brain will take no longer. It never crosses his mind (nor anyone I have seen) that nobody can make clear how an atom 'emerges' from

electrons, neutrons and protons or a molecule emerges from atoms nor cells from molecules etc. Yes, there are some equations but if you look carefully you will see lots of hand waving and facts that are just accepted as 'the way things are' and so I think it clearly is the same with consciousness, color, choice, pain emerging from bunches of cells.

He starts off on the first page appealing to the laws of physics for protection against fantastic notions such as immaterial souls, but physics is made of notions just as fantastic (uncertainty, entanglement, wave/particle duality, Schrodinger´s dead/alive cat etc.) and as Feynmann said many times ``Nobody understands physics!´´ Many think nobody ever will and I am one of many who say there is nothing to 'understand' but rather there is just lots of 'things' along with existence, space, time, matter etc. to accept. There is a limit to what our tiny brain can do and maybe we are at that limit now.

Even if we create a massive computer that could understand (in some sense) far better than we, it is not clear that it could explain to us. Understanding an idea requires a certain level of intelligence or power (e.g., holding a certain number of things in mind and performing a certain number of calculations/second). Most people will never grasp the abstruse math of string theory no matter how long they have to do it. Many cannot understand much simpler concepts. So, there is good reason to suppose that our supersmart computer, even if we teach it how to think in the 'same' sense that we do, will never be able to explain really complex things to us.

On the first page is one of his favorite quotes, which compares the brain to a bunch of tiny robots, and on pg2 he says that we are made of mindless robots. The way the brain (and any cell) works is nothing at all like the way robots work and we don´t even know how to conceptualize the difference (i.e., we know how robots work but not how brains work—e.g., how do they make choices, understand images and motives etc.). As I noted above, this was pointed out by Searle 30 years ago but Dennett (and countless others) just does not get it.

We are also told on the first page that science will let us understand our freedom and give us better foundation for our morality. So far as I can see, neither science nor philosophy, nor religion, has any effect on our understanding of our freedom or morality. Although he discusses the biology of altruism and rational choice at length, he never mentions the abundant evidence from cognitive psychology that our moral intuitions are built in and demonstrable in 4 year old children. Instead, he spends much time trying to show how choice and morality come from memories of events and our interaction with others. On pg2 he says our values have little to do with the goals of our cells and on pg2 to3 that our personality differences are due to how our ´´robotic teams are put together, over a lifetime of growth and experience.`` This is a bald dismissal of human nature, of the abundant evidence that our differences are to a large extent programmed into our genes and fixed in early childhood, and is typical of his constant confused wandering back and forth between determinism and environmentalism (i.e., his view that we develop morality over time by experience and by thinking about moral issues). Many other sections of the book show the same confusion. Those who don´t know the evidence may wish to read Pinker´s ´´The Blank Slate´´, Boyer´s ´´Religion Explained´´ and any of the hundred or so recent texts, and tens of thousands of articles and web pages on personality development, and evolutionary and cognitive psychology.

On pg4 he says bison don´t know they are bison and that we have known we are mammals for only a few hundred years. Both show a fundamental lack of understanding of cognitive psychology. The cognitive templates for ontological categories were evolved, in their original forms, hundreds of millions of years ago and animals have the inborn ability to recognize others of their species and of other species and classes of animals and plants without any learning sufficient to establish categories. Bison know they are like other bison and our ancestors knew they were like other mammals and that reptiles were different but similar to each other etc. Cognitive studies have shown these types of abilities in very young children.

Of course, it is true that the words ´bison´ and ´mammal´ are recent, but they have nothing to do with how our brains work.

On page 5 he attributes postmodernism´s hostility to science as a product of ´fearful thinking´ but does not speculate why that is. In spite of his acquaintance with cognitive psychology he does not see that this is likely due to the fact that many science results clash with the feelings normally produced by the operation of the inference engines for intuitive psychology, coalition, social mind, social exchange, etc.

On page 9 he notes that free will is a problem and our attitudes to it make a difference, but for whom? Nobody but philosophers. We make choices. What´s the problem? One has to step outside life to experience a problem and then everything becomes a problem. What are consciousness, pain, yellow, intention, matter, quarks, gravity etc.? I doubt that any normal person has ever experienced a fundamental change in their interactions with people or their decision-making processes due to their thinking about choice. This shows that there is something strange about such questions. Wittgenstein shows that the language games are different. There are games for language connected with the cognitive templates for Decisions, or seeing colors etc., and thinking philosophically is operating them in decoupled mode.

Decoupled modes permit thinking about the past, planning for the future, guessing the mental states of others, etc., but if one takes the results in the wrong way and starts to think `´John will try to steal my wallet´´, rather than just imagining that John might do it, confusion enters and those who cannot turn off the decoupled mode or distinguish it from coupled mode, enter the realm of pathology. Some aspects of schizophrenia and other mental illness might be seen this way--they lose control of which mode they are in, e.g., not being able to see the difference between the motives people have and the motives they might have.

One can then see much of the philosophizing people do as operating in these decoupled modes but failing to be able to keep in front of them the differences from the normal mode. Normal mode—e.g., what is that lion doing-- was undoubtedly the first one evolved and decoupled modes--what did that lion do last time or what does he intend to do next--evolved later. This was

probably never a problem for animals--any animal that spent too much time worrying about what might happen would not be very successful contributing to the gene pool. It is interesting to speculate that only when humans developed culture and began degenerating genetically, could large numbers of people survive with genes that led them to spend alot of time in decoupled modes. Hence, we have philosophy and this book, which is mostly about running the decision templates in decoupled mode where there are no real consequences except earning royalties for putting the results in a book for other people to use to run their engines in decoupled mode. Let us alter Wittgenstein´s quote to read: ´´As long as there continues to be a verb ´to decide´ that looks as if it functions in the same way as ´to eat´ and ´to drink´, as long as we continue to talk of freedom of action, of saying I wish I had done otherwise, 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.´´

As with most philosophy books, nearly every page, often every paragraph, changes from one type of language game to another without noticing that now one would have to be joking or dreaming or acting in a play or reciting a story, etc., and not actually intending anything nor describing an actual situation in the world. On page 10 he says we count on free will for the whole way of thinking about our lives, like we count on food and water, but whoever, outside philosophy, standing in front of lunch counter full of food, ever thinks how fine it is that they have free will so they can pick coke instead of mineral water? Even if I want to be a serious compatibilist and try thinking this in decoupled mode, I have to exit and enter nondecoupled mode to make the actual choice. Only then can I go back to decoupled mode to wonder what might have happened if I had not had the ability to make a real choice. Wittgenstein noted how pretend games are parasitic on real ones (this is not a trivial observation!). The ability to engage in very complex decoupled scenarios is already evident in 4 year old children. So, I would say that normally, nobody counts on having choice, but rather we just choose. As Wittgenstein made clear it is action based on certainty that is the bedrock of our life. See the recent writings of Daniele Moyal-Sharrock.

On the same page, he shows again that he does not grasp cognitive basics. He says we learn to conduct our lives in the conceptual atmosphere of choice, and that `´It appears to be a stable and ahistorical construct, as eternal and unchanging as arithmetic, but it is not.´´ And on page 13--´´It is an evolved creation of human activity and beliefs´´. The whole thrust of cognitive psychology (and Wittgenstein) is that we do NOT learn the basics of planning, deciding, promising, resenting, etc., but that these are built-in functions of the inference engines that work automatically and unconsciously and start running in very early childhood. There is no evidence that they change as we grow, or are in any way subject to our beliefs, only that they mature just as our body does.

On p14 he suggests it's probable that our having free will depends on our believing we have it! Do we believe we see an apple, feel a pain, are happy? The language game of belief is very different from that of knowing. We can believe we have a dollar in our pocket but if we take it out and look at it we can´t meaningfully then say that we still believe it (except as a joke etc.). The inference engine can run in decoupled (belief) mode so we can imagine having choices or making them, but in life we just make them and it is only in very odd situations we can say that we believe we made a choice. But Dennett is saying this is the universal case. If making a choice had any dependence on belief than so would everything else-- consciousness, seeing, thinking, etc. If we take this seriously (and he says ´the serious problems of free will´) then we are getting into trouble and if we actually try to apply it to life, then madness is minutes away. He, like nearly all philosophers had no clue that Wittgenstein showed us the way out of this need to ground our actions on beliefs by describing the actual basis of knowing which is the ungrounded 'hinges' or automatisms of System 1 thinking in his last work 'On Certainty'. Daniele Moyal-Sharrock has explained this over the last decade and I have summarized her work and incorporated it in my reviews and articles.

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On page 65 et seq., he discusses causation, intention and the `informal predicates´ that we use to describe atoms etc., but cognitive research has shown that we describe all 'objects' with a limited number of ontological

categories, which we analyze with our intuitive physics modules, and that when agents (i.e., animals or people or things like them—i.e., ghosts or gods) are involved we use our concepts (engines) for agency, intuitive psychology, social minds, etc. to decide how to behave. There is almost certainly no causation module but rather it will involve all of these and other inference engines, depending on the precise situation. Discussing possibility and necessity is much easier if one talks in terms of the output of our modules for intuitive physics, agency, ontological categories etc. Of course, there is no mention here of Wittgenstein´s many incisive comments on causation, intention, deciding, nor of Searle´s now classic works on Intention and Social Reality.

He spends much time on Ainslie´s book ´Breakdown of Will´, in which is discussed the hyperbolic discounting faculties (i.e., inference engines) by which we evaluate probable outcomes.

He makes much of the excellent work of Robert Frank on altruism, emotion and economics, but the book he cites was 15 years old when this book was published. It was Bingham´s idea, amplified by Frank and by Boyd and Richardson (1992) that cooperation was greatly stimulated by the evolution of means for punishing cheaters. He suggests these as examples of Darwinian approaches that are obligatory and promising.

Indeed, they are, and in fact they are standard parts of economic, evolutionary and cognitive theory, but unfortunately, he makes little reference to the other work in these fields. All that work tends to show that people do not choose but their brains choose for them. He does not establish any convincing connection between this work and the general problem of choice.

Philosophers of all stripes have been hypnotized by their ability to decouple the inference engines to play `what if´´ games, loving to put counterintuitive tags on ontological categories (i.e., if Socrates was immortal etc.). In this respect, they share some elements with primitive religion (see Boyer). This is

not a joke, nor an insult, but merely points out that once one has a grasp of modern cognitive concepts, one sees that they apply thoughout the whole spectrum of human activity (and it would be odd if they did not). But as Wittgenstein explained so beautifully, the language games and the inference engines of S2 have their limits--explanations come to an end--we hit bedrock (S1). But the philosopher thinks he can see beyond it and walks out on the water.

On p216 he says that making oneself so that one could not have done otherwise is a key innovation in the evolutionary ascent to free will, and that we can only be free if we learn how to render ourselves insensitive to opportunities. But where this ability resides is not revealed for several chapters! Dennett has a penchant for hiding his ideas in a massive amount of rather irrelevant text. Again, he gets things backwards, as there is a vast body of very good evidence from biology and psychology that we get the feelings that we should behave in some way from our inference engines and these are not provided by some part of our conscious self, but by the automatic and unconscious operation of the engines. As he notes, hundreds of experiments with the Prisoner´s Dilemma and related protocols have shown how easy it is to manipulate people´s choices and that their calculations are not conscious and deliberate at all and in fact much of modern psychological, sociological and neuroeconomics research is devoted to distinguishing the automatisms of S1 from the deliberative thinking of S2 and showing how S1 rules.
When the situation is manipulated to make people conscious, they are much slower and less reliable (S2). So, there has been constant pressure of natural selection to make the engines fast and automatic and inaccessible to deliberate thought.

Dennett says `we make ourselves´ so that we could not do otherwise and that this is the basis of morality and choice. The evidence would seem to be exactly the opposite. Our inference engines give us basic moral intuitions and we generally act in accord with the results. If we or others do not we feel guilt, outrage, resentment etc., and then cheater genes will invade the population and this is one of the main theories as to how a good part of morality evolved. Our genes make us so we can´t (mostly) do otherwise, not our will or

whatever Dennett thinks can do it. We can often choose to do otherwise, but our own intuitions and the knowledge of social disapproval usually serve to limit our choices. These intuitions evolved in small groups between 50,000 and some millions of years ago. In the modern world, the intuitions are often not to our long-term advantage and the social controls weak. This is a prime reason for the inexorable progress into chaos in the world.

On p225 he finally sneaks in a definition of free will as ´´a complicated snarl of mechanistic causes that look like decision making (from certain angles)´´. He claims that this plays all the valuable roles of free will but lacks some (unspecified) properties possessed by traditional free will. The smoke is thick but I am pretty sure one of those unspecified properties is what we understand as choice. He insists (top of p226) that his naturalistic account of decision making leaves plenty of room for moral responsibility, but making ourselves so we couldn´t do otherwise does not seem to describe the way we actually function, nor does it seem to leave any room for morality, as that would seem to consist precisely in being able to do otherwise.

He does not propose any test for deciding if a choice is voluntary or forced and I doubt he could do so. Normally if someone asks us to move our hand, we know what counts as having a choice, but, typical of philosophers, I expect that regardless of whether it moves or not he will count both as evidence for his position and of course if everything counts then nothing counts as Wittgenstein so trenchantly remarked many times.

At this point he also starts his discussion of Libet´s well known work on conscious attention, which is the only part of the book that I felt was worth my time. However, Libet's claim that we make decisions without awareness has been debunked many times, by both psychologists and philosophers (e.g., Searle and Kihlstrom).

On page 253 et seq., he sneaks in his definition of conscious will—the ´´brains user illusion of itself´´´ which has as one of its main roles providing ´´me with the means of interfacing with myself at other times``. And ``Illusory or not,

conscious will is the persons guide to his or her own moral responsibility for action. `` He says the trick we need is to see that ``I'' control what is happening inside the ''simplification barrier''... ''where decision making happens''. ``Mental events'' become conscious by ''entering into memory''. ''The process of self-description... is what we are''. The crucial thing is that choice is possible because the self is distributed over space (the brain) and time (memories). He realizes this is going to leave many incredulous (everyone who can follow this and really understands the bizarre language games!). ''I know that many people find it hard to grasp this idea or take it seriously. It seems to them to be a trick with mirrors, some kind of verbal slight of hand that whisks consciousness, and the real Self, out of the picture just when it was about to be introduced.'' Many will say he took the words out of their mouth, but I would say it's incoherent and that everything we know about consciousness and the whole universe (making the obvious extensions of such claims) was gone long before we got this far in his tome. And a careful look at the language games shows their lack of coherence (i.e., no clear Conditions of Satisfaction as I note in my articles).

On p259 he says that culture has made us rational animals! This is a stunning denial of human (and animal) nature (i.e., genetics and evolution) coming from the person who wrote 'Darwin's Dangerous Idea''!

Presumably he is talking about his idea that it is memories spread over space (the brain and other people) and time (much like Dawkins' memes) that give us choices and morals and consciousness (line 6 from bottom). He says consciousness is a user-interface but it is never made clear who or where the user is and how it interfaces with the brain (you will have to suffer through 'Consciousness Explained' to find that there is no answer there either). Though he makes many references to evolutionary and cognitive psychology, he seldom uses any of the terminology that has been current for decades (social mind, intuitive psychology, coalitional intuitions etc.) and clearly is not familiar with most of the concepts. If he means that we got the fine details of morality from culture, that's ok, but this is the S2 icing on the cake and the S1 cake was baked by the genes.

We are also told here that R&D (by which he means evolution here, but other things elsewhere) has given us the self and that language creates a new kind of consciousness and morality. I am sure that he will get little agreement on this. It seems quite clear that consciousness and the basics of morality evolved in primates (and earlier) long before spoken language (though it is very contentious as to how language evolved from extant capacities in the brain). He continues ``morality memes arose by accident some tens of thousands of years ago`` which would be OK if he meant the icing on the cake but he clearly means the cake! And then he says the point of morality is not the survival of our genes, which is an amazing (and totally incorrect) thing to say, even if he was only referring to memes.

On p260 he claims that because we do not comprehend our ´´bland dispositions to cooperate´´, they mean nothing to us, but it is the operation of our templates (i.e., reciprocal altruism promoting inclusive fitness) that is everything to us. As Dawkins recently noted in his comments on E.O Wilson's disastrous recent work supporting the phantasm of 'group selection', natural selection is inclusive fitness (see my article on Wilson's 'The Social Conquest of Earth'). There is ample evidence that if one of our many 'templates' is damaged, a person cannot function properly as a social being (e.g., autism). I would say it is the operation of the templates for intuitive psychology etc., which lead Dennett to the counterintuitive views that we do not have consciousness and choice in the way we think.

He also says here that it was one of the major evolutionary transitions when we were able to change our views and reflect on reasons for them. This again reflects his lack of understanding of evolutionary psychology. I know of no evidence that the basic moral intuitions, like all the templates, are accessible to consciousness but there is a huge body of work showing the opposite. We may decide our cheating was justifiable, or forgive someone else´s cheating, but we still know it was cheating (i.e., we cannot change the engine). I suspect my ancestors a million years ago had the same feelings in the same situation, but what has happened is that there are now lots of other things that may be taken as relevant, and that sometimes these will lead me to act contrary to my feelings. Another issue is that as culture developed, one had to make many

important or ´moral type` decisions for which the engines were not evolved to give a clear answer.

On pg 267 he says that we now replace our `free floating rationales´ (probably corresponding to what cognitive psychologists call our templates or inference engines) with reflection and mutual persuasion. And on pg 286 he says that it is a child´s upbringing --demanding and giving reasons-- that affects moral reasoning. Again, he just has no grasp of what has happened in the last 30 years of research--the templates are innate S1 automatisms and cannot change with reflection or upbringing. We are then told again that consciousness makes moral issues available over time to the self, which takes responsibility. It is not any more coherent or credible with repetition.

On pg 289 he has a chapter summary which repeats the mistaken notions that it is culture that makes it possible to reflect and that choice depends on education (memory) and sharing. It´s clear that it is not culture but the inherited cognitive structures that make it possible to reflect and to choose and that culture determines the acceptable actions and their rewards or punishments. On pg. 303 he discusses the classic philosophical barrier between ´ought´ and ´is´, unaware that our templates solved that problem long ago— i.e., they tell us how to feel about situations regarding other people. He also seems to be unaware that there are hundreds of 'cultural' universals implanted in our genes (e.g. see Pinker's ´The Blank Slate´).

He often starts into what looks like it's going to be a good discussion of some issues in evolutionary psychology, but invariably wanders off into philosophical arcana and winds up with more confusion. This happens on pg. 261 where he states that concepts like ´praiseworthy´ were shaped over millennia by culture, while most would say the basis for such concepts is in the genes and each culture only determines the details of acceptable reactions to the intuitions its members get from their innate mechanisms. On pg 262 he tries to explain how an ESS (Evolutionarily Stable Strategy) can produce morality. His idea here is that genetic `R&D`(i.e., evolution) produces dim understandings of morals and then culture (memetics) produces variations and clarifications. I would say that we all know, and much research has made

clear, that we commonly get very clear results from our inference engines and only dimly understand in special cases. Culture merely decides what we can do about our feelings.

The last part of the book is mostly concerned with moral culpability. He refers to the legal classic by Hart and Honore, which I started reading 30 years ago since its authors were deeply influenced by Wittgenstein. Dennett tells us that we have control overour own morality and that thinking about morality will improve us. But, there seems no justification whatever for this view in this book. There is nothing at all here to help anyone escape from the dictates of the monkey mind and I am quite sure that when industrial civilization collapses in the 22nd century people will be acting as their ancestors did 200,000 years ago. It is a defensible point of view that those who manage to escape do so by traveling a spiritual path that has no connection with philosophy- and there is not a hint of spirituality in this entire book--another telling point considering that many mystics have fascinating things to say about the functioning of the mind. I find more wisdom about how to be free and moral in any of Osho´s 200 books and tapes than anywhere in philosophy.

Unsurprisingly, one rarely finds spiritually and morally advanced people teaching at universities. There is no sign here, nor in anything he has done, that Dennett is morally superior. After 40 years of thinking about morality he launches personal attacks on his critics or arrogantly dismisses them. It seems clear that, like all of us, he is trapped in the limits of his inference engines.

So, how much opportunity is there to improve our morality? It seems clear (e.g., see Pinker´s `The Blank Slate`) that most of our behavior is genetic and the rest due to unknown factors in our environment, in spite of the vigorous efforts of parents and religions and political parties. On average, maybe 5% of the variation in moral behavior (variations are the only thing we can study) is due to our own efforts (culture). The moral choices that matter most today are those affecting the fate of the world. But our templates were not evolved to deal with overpopulation (except by murder) and climate change (except by moving elsewhere and killing any opposition).

How remarkable it would be if just one of the hundreds of millions of educated people in the world managed to figure out what consciousness or choice or any mental phenomenon really is. And if one did, we would expect them to be a scientist at the cutting edge of research using some exotic fMRI equipment and the latest parallel processing neural networked fuzzy logic computer etc. And that would only mean they specify the neural circuits. So, they cannot answer this question at all! But it needs no answer –like the existence of space, time, matter, it's just the way things are and the philosopher's job is to clarify the language games we can play. But a philosopher or physicist just sitting there thinking, coming up with the solution to the greatest scientific puzzle there is! And then writing a whole book about it without checking with the sceptics first. To return to the quote at the beginning--´Ambition is the death of thought´. Indeed--though clearly Wittgenstein was thinking of profound thought!

Review of I Am a Strange Loop by Douglas Hofstadter (2007)

Michael Starks

ABSTRACT

Latest Sermon from the Church of Fundamentalist Naturalism by Pastor Hofstadter. Like his much more famous (or infamous for its relentless philosophical errors) work Godel, Escher, Bach, it has a superficial plausibility but if one understands that this is rampant scientism which mixes real scientific issues with philosophical ones (i.e., the only real issues are what language games we ought to play) then almost all its interest disappears. I provide a framework for analysis based in evolutionary psychology and the work of Wittgenstein (since updated in my more recent writings).

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Wittgenstein and Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

"It might justly be asked what importance Gödel's proof has for our work. For a piece of mathematics cannot solve problems of the sort that trouble us. --The answer is that the situation, into which such a proof brings us, is of interest to us. 'What are we to say now?'--That is our theme. However, queer it sounds, my task as far as concerns Gödel's proof seems merely to consist in making clear what such a proposition as: 'Suppose this could be proved' means in mathematics." Wittgenstein "Remarks on the Foundations of Mathematics" p337(1956) (written in 1937).

"My theorems only show that the mechanization of mathematics, i.e., the elimination of the mind and of abstract entities, is impossible, if one wants to have a satisfactory foundation and system of mathematics. I have not proved that there are mathematical questions that are undecidable for the human

mind, but only that there is no machine (or blind formalism) that can decide all number- theoretic questions, (even of a very special kind) .... It is not the structure itself of the deductive systems which is being threatened with a brakedown, but only a certain interpretation of it, namely its interpretation as a blind formalism." Gödel "Collected Works" Vol 5, p 176-177. (2003)

"All inference takes place a priori. The events of the future cannot be inferred from those of the present. Superstition is the belief in the causal nexus. The freedom of the will consists in the fact that future actions cannot be known now. We could only know them if causality were an inner necessity, like that of logical deduction. -- The connexion of knowledge and what is known is that of logical necessity. ("A knows that p is the case" is senseless if p is a tautology.) If from the fact that a proposition is obvious to us, it does not follow that it is true, then obviousness is no justification for belief in its truth." TLP 5.133--5.1363

"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 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." Wittgenstein TLP 6.52 (1922)

I have read some 50 reviews on the net (that by quantum physicist David Deutsch was perhaps the best) and none of them provide a satisfying framework, so I will try to give novel comments that will be useful, not only for this book but for any book in the behavioral sciences (which can include ANY book, if one grasps the ramifications).

Like his classic Gödel, Escher, Bach: The Eternal Golden Braid, and many of his other writings, this book by Hofstadter (H) tries to find correlations or connections or analogies that shed light on consciousness and all of human experience. As in GEB, he spends a great deal of time explaining and drawing analogies with the famous "incompleteness" theorems of Gödel, the

"recursive" art of Escher and the "paradoxes" of language (though, as with most people, he does not see the need for quotes, and this is the core of the problem). The idea is that their seemingly bizarre consequences are due to "strange loops" and that such loops are in some way operative in our brain. In particular, they may "give rise" to our self, which he seems roughly to equate with consciousness and thinking. As with everyone, when he starts to talk about how his mind works, he goes seriously astray. I suggest that it is in finding the reasons for this that the interest in this book, and most general commentary on behavior lies.

I will contrast the ideas of ISL with those of the philosopher (armchair psychologist) Ludwig Wittgenstein (W), whose commentaries on psychology, written from 1912 to 1951, have never been surpassed for their depth and clarity. He is an unacknowledged pioneer in evolutionary psychology (EP) and developer of the modern concept of intentionality. He noted that the fundamental problem in philosophy is that we do not see our automatic innate mental processes. He gave many illustrations (one can regard the entire 20,000 pages of his nachlass as an illustration), some of them for words like "is" and "this", and noted that all the really basic issues usually slip by without comment. A major point which he developed was that nearly all of our intentionality (roughly, our evolutionary psychology (EP), rationality or personality) is invisible to us and such parts as enter our consciousness are largely epiphenomenal (i.e., irrelevant to our behavior). The fact that nobody can describe their mental processes in any satisfying way, that this is universal, that these processes are rapid and automatic and very complex, tells us that they are part of the "hidden" cognitive modules (templates or inference engines) that have been gradually fixed in animal DNA over more than 500 million years.

As in virtually all writing which tries to explain behavior (philosophy, psychology, sociology, anthropology, history, politics, theology, and even, as with H, math and physics), I am a Strange Loop (ISL) commits this kind of error (oblivion to our automaticity) continually and this produces the puzzles which it then tries to solve. The title of ISL comprises words we all know, but as W noted, word uses can be seen as families of language games (grammar)

which have many senses (uses or meanings), each with its own contexts. We know what these are in practice but if we try describing them or philosophizing (theorizing) about them, we nearly always go astray and say things that may appear to have sense but lack the context to give them sense.

It never crosses Hofstadter's mind that both "strange" and "loop" are out of context and lack any clear sense (to say nothing about "I" and "am"!). If you go to Wikipedia, you find many uses (games as W often said) for these words and if you look around in ISL you will find them referred to as if they were all one. Likewise, for "consciousness", "reality", "paradox", "recursive", "self-referential", etc. So, we are hopelessly adrift from the very first page, as I expected from the title. A loop in a rope can have a very clear sense and likewise a diagram of a steam engine governor feedback loop, but what about loops in mathematics and the mind? H does not see the "strangest loop" of all—that we use our consciousness, self and will to deny themselves!

Regarding Gödel's famous theorems, in what sense can they be loops? What they are almost universally supposed to show is that certain basic kinds of mathematical systems are incomplete in the sense that there are "true" theorems of the system whose "truth" (the unfortunate word mathematicians commonly substitute for validity) or "falsity (invalidity) cannot be proven in the system. Though H does not tell you, these theorems are logically equivalent to Turing's "incompleteness" solution of the famous halting problem for computers performing some arbitrary calculation. He spends a lot of time explaining Gödel's original proof, but fails to mention that others subsequently found vastly shorter and simpler proofs of "incompleteness" in math and proved many related concepts. The one he does briefly mention is that of contemporary mathematician Gregory Chaitin—an originator with Kolmogorov and others of Algorithmic Information Theory-- who has shown that such "incompleteness" or "randomness" (Chaitin's term-- though this is another game), is much more extensive than long thought, but does not tell you that both Gödel's and Turing's results are corollaries to Chaitin's theorem and an instance of "algorithmic randomness". You should refer to Chaitin's more recent writings such as "The Omega Number (2005)", as Hofstadter's only ref. to Chaitin is 20 years old (though Chaitin has no more grasp of the

larger issues here –i.e., innate intentionality as the source of the language games in math-- than does H and shares the 'Universe is a Computer" fantasy as well).

Hofstadter takes this "incompleteness" (another word (conceptual) game out of context) to mean that the system is self-referential or "loopy" and "strange". It is not made clear why having theorems that seem to be (or are) true (i.e., valid) in the system, but not provable in it, makes it a loop nor why this qualifies as strange nor why this has any relationship to anything else.

It was shown quite convincingly by Wittgenstein in the 1930's (i.e., shortly after Gödel's proof) that the best way to look at this situation is as a typical language game (though a new one for math at the time)—i.e., the "true but unprovable" theorems are "true" in a different sense (since they require new axioms to prove them). They belong to a different system, or as we ought now to say, to a different intentional context. No incompleteness, no loops, no self-reference and definitely not strange! W: "Gödel's proposition, which asserts something about itself, does not mention itself" and "Could it be said: Gödel says that one must also be able to trust a mathematical proof when one wants to conceive it practically, as the proof that the propositional pattern can be constructed according to the rules of proof? Or: a mathematical proposition must be capable of being conceived as a proposition of a geometry which is actually applicable to itself. And if one does this it comes out that in certain cases it is not possible to rely on a proof." (RFM p336). These remarks barely give a hint at the depth of W's insights into mathematical intentionality, which began with his first writings in 1912 but was most evident in his writings in the 30's and 40's. W is regarded as a difficult and opaque writer due to his aphoristic, telegraphic style, but if one starts with his only textbook style work—the Blue and Brown Books --and understands that he is explaining how our evolved higher order thought works, it will all become clear to the persistent.

W lectured on these issues in the 1930's and this has been documented in several of his books. There are further comments in German in his nachlass (some of it formerly available only on a $1000 cdrom but now, like nearly all

his works, on p2p). Canadian philosopher Victor Rodych has written two articles on W and Gödel in the journal Erkenntnis and 4 others on W and math, which I believe constitute a nearly definitive summary of W's comments on the foundations of math. He lays to rest the previously popular notion that W did not understand incompleteness (and much else concerning the psychology of math). In fact, so far as I can see W is one of very few to this day (and NOT including Gödel! —though see his penetrating comment quoted above) who does. Related forms of "paradox" which exercise H (and countless others) so much was extensively discussed by W with examples in math and language and seems to me a natural consequence of the piecemeal evolution of our symbolic abilities that extends also to music, art, games etc. Those who wish contrary views will find them everywhere and regarding W and math, they may consult Chihara in Philosophical Review V86, p365-81(1977). I have much respect for Chihara (I am one of maybe half a dozen people who have read his "A Structural Account of Mathematics" cover to cover) but he fails on many basic issues such as W's explanations of paradoxes as unavoidable and almost always harmless facets of our EP.

I have commented further on these issues in my review of Yanofsky's book and elsewhere.

In any case, it would seem that the fact that Gödel's result has had zero impact on math (except to stop people from trying to prove completeness!) should have alerted H to its triviality and the "strangeness" of trying to make it a basis for anything. I suggest that it be regarded as another conceptual game that shows us the boundaries of our psychology. Of course, all of math, physics, and human behavior can usefully be taken this way.

While on the topic of W, we should note that another work which H spends a lot of time on is Whitehead and Russell's classic of mathematical logic "Principia Mathematica", primarily since it was at least partly responsible for Gödel's work leading to his theorems. W had gone from Russell's beginning logic student to his teacher in about a year, and Russell had picked him to rewrite the Principia. But W had major misgivings about the whole project (and all of philosophy as it turned out) and, when he returned to philosophy

in the 30's, he showed that the idea of founding math (or rationality) on logic was a profound mistake. W is one of the world's most famous philosophers and made extensive commentaries on Gödel and the foundations of mathematics and the mind; is a pioneer in EP (though nobody seems to realize this); the discoverer of the basic outline and functioning of higher order thought and much else, and it is amazing that Dennett &H, after half a century of study, are completely oblivious to the thoughts of the greatest natural psychologist of all time (though they have 6 billion for company). There is, as some have remarked, a collective amnesia regarding W not only in psychology (for which his works should be in universal service as texts and lab manuals) but in all the behavioral sciences including, amazingly, philosophy.

H's association with Daniel Dennett (D), another famously confused writer on the mind, has certainly done nothing to help him learn new perspectives in the nearly 30 years since GEB. In spite of the fact that D has written a book on intentionality (a field which, in its modern version, was essentially created by W), H seems to have no acquaintance with it at all. Perceptions leading to memories, feeding into dispositions (inclinations)(W's terms, also used by Searle, but called "propositional attitudes by others) such as believing and supposing, which are not mental states and have no precise duration etc/, are momentous advances in understanding how our mind works, which W discovered in the 20's, but with threads going back to his writings before the first worldwar.

The Eternal Golden Braid is not realized by H to be our innate Evolutionary Psychology, now, 150 years late (i.e., since Darwin), becoming a burgeoning field that is fusing psychology, cognitive science, economics, sociology, anthropology, political science, religion, music (e.g., G. Mazzola's "The Topos of Music"—(topos are substitutes for sets) one of the great science (psychology) books of the 21st century, though he is clueless about W and most of the points in this review), art, math, physics and literature. H has ignored or rejected many persons one might regard as our greatest teachers in the realm of the mind—W, Buddha, John Lilly, John Searle, Osho, Adi Da (see his "The Knee of Listening"), Shulgin and countless others. The vast

majority of the insights from philosophy, as well as those from quantum physics, probability, meditation, EP, cognitive psychology and psychedelics do not rate even a passing reference here (nor in most philosophical writings of scientists).

Though there are some good books in his bibliography, there are many I would regard as standard references and hundreds of major works in cognitive science, EP, math and probability, and philosophy of mind and science that are not there (nor in his other writings). His sniping at Searle is petty and pointless—the frustration of someone who has no grasp of the real issues. In my estimation, neither H nor anyone else has provided a convincing reason to reject the Chinese room argument (the most famous article in this field) that computers don't think (NOT that they cannot ever do something that we might want to call thinking— which Searle admits is possible). And Searle has (in my view) organized and extended W's work in books such as "The Construction of Social Reality" and "Rationality in Action'-- brilliant summations of the organization of HOT (higher order thought—i.e., intentionality)—rare philosophy books you can even make perfect sense of once you translate a little jargon into English! H, D and countless others in cognitive science and AI are incensed with Searle because he had the temerity to challenge (destroy- I would say) their core philosophy –the Computational Theory of Mind (CTM) almost 30 years ago and continues to point this out. Of course, they (nearly) all reject the Chinese room or simply ignore it, but the argument is, in the view of many, unanswerable. The recent article by Shani (Minds and Machines V15, p207- 228(2005)) is a nice summary of the situation with references to the excellent work of Bickhard on this issue. Bickhard has also developed a seemingly more realistic theory of mind that uses nonequilibrium thermodynamics, in place of Hofstadter's concepts of intentional psychology used outside the contexts necessary to give them sense.

Few realize that W again anticipated everyone on these issues with numerous comments on what we now call CTM, AI or machine intelligence, and even did thought experiments with persons doing "translations" into Chinese. I had noticed this (and countless other close parallels with Searle's work) when

I came upon Diane Proudfoot's paper on W and the Chinese Room in the book "Views into the Chinese Room" (2005). One can also find many gems related to these issues in Cora Diamond's edition of the notes taken in W's early lectures on math "Wittgenstein's Lectures on the Foundations of Mathematics, Cambridge 1934(1976). W's own "Remarks on the Foundations of Mathematics" covers similar ground. One of the very few who has surveyed W's views on this in detail is Christopher Gefwert, whose excellent pioneering book "Wittgenstein on Minds, Machines and Mathematics" (1995), is universally ignored. Though he was writing before there was any serious thought concerning electronic computers or robots, W realized that the basic issue here is very simple---computers lack a psychology (and even 70 years later we have barely a clue how to give them one), and as usual he summed it all up in his unique aphoristic way "But a machine surely cannot think! --Is that an empirical statement? No. We only say of a human being and what is like one that it thinks. We also say it of dolls and no doubt of spirits too. Look at the word "to think" as a tool." (Philosophical Investigations p113). Out of context, many of W's comments may appear insipid or just wrong, but the perspicacious will find that they usually repay prolonged reflection—he was nobody's fool.

Hofstadter, in all his writings, follows the common trend and makes much of "paradoxes", which he regards as self-references, recursions or loops, but there are many "inconsistencies" in intentional psychology (math, language, perception, art etc.) and they have no effect, as our psychology evolved to ignore them. Thus, "paradoxes" such as "this sentence is false" only tell us that "this" does not refer to itself. Any symbolic system we have (i.e., language, math, art, music, games etc.) will always have areas of conflict, insoluble or counterintuitive problems or ill definitions. Hence, we have Gödel's theorems, the liar's paradox, inconsistencies in set theory, prisoner's dilemmas, Schrodinger's dead/live cat, Newcomb's problem, Anthropic principles, Bayesian statistics, notes you can't sound together or colors you can't mix together and rules that can't be used in the same game. A set of subindustries within Decision Theory, Behavioral Economics, Game Theory, Philosophy, Psychology and Sociology, Law, Political Science etc. and even the Foundations of Physics and Math (where it is commonly disguised as

Philosophy of Science) has arisen which deals with endless variations on "real" (e.g., quantum mechanics) or contrived (e.g., Newcomb's problem—see Analysis V64, p187- 89(2004)) situations where our psychology –evolved only to get food, find mates and avoid becoming lunch—gives ambivalent results, or just breaks down.

Virtually none of those writing the hundreds of articles and countless books on these issues which appear yearly seem aware they are studying the limits of our innate psychology and that Wittgenstein usually anticipated them by over half a century. Typically, he took the issue of paradox to the limit, pointing to the common occurrence of paradox in our thinking, and insisted that even inconsistencies were not a problem (though Turing, attending his classes, disagreed), and predicted the appearance of inconsistent logical systems. Decades later, dialetheic logics were invented and Priest in his recent book on them has called W's views prescient. If you want a good recent review of some of the many types of language paradoxes (though with no awareness that W pioneered this in the 1930's and largely innocent of any grasp of intentional context) see Rosenkranz and Sarkohi's "Platitudes Against Paradox" in Erkenntnis V65, p319-41(2006). Appearance of many W related articles in this journal is most appropriate as it was founded in the 30's by logical positivists whose bible was W's Tractus Logico Philosophicus. Of course, there is also a journal devoted to W and named after his most famous work— "Philosophical Investigations".

H, in line with nearly universal practice, refers often to our "beliefs" for "explanations" of behavior, but our shared psychology does not rest on belief—we just have awareness and pains and know from infancy that animals are conscious, self-propelled agents that are different from trees and rocks. Our mother does not teach us that any more than a dog's mother does and in could not teach us! And, if this is something we learn, then we might teach a child (or a dog) that a bird and a rock are really the same kind of thing (i.e., to ignore innate intentional psychology).

W clearly and repeatedly noted the underdetermination of all our concepts

(e.g., see his comments on addition and the completion of series in Remarks on the Foundations of Mathematics), which mandated their becoming innate (ie, evolution had to solve this problem by sacrificing countless quadrillions of creatures whose genes did not make the right choices).

Nowadays this is commonly called the problem of combinatorial explosion and often pointed to by evolutionary psychologists as compelling evidence for innateness, unaware that W anticipated them by over 50 years.

Our innate psychology does not rest on "beliefs" when it is clearly not subject to test or doubt or revision (e.g., try to give a sense to "I believe I am reading this review" and mean (i.e., find a real use in our normal life for) something different from "I am reading this review"). Yes, there are always derivative uses of any sentence including this one, but these are parasitic on the normal use. Before any "explanations" (really just clear descriptions, as W noted) are possible, it has to be clear that the origins of our behavior lie in the axioms of our innate psychology, which are the basis for all understanding, and that philosophy, math, literature, science, and society are their cultural extensions.

Dennett (and anyone who is tempted to follow him—i.e., everyone) is forced into even more bizarre claims by his skepticism (for I claim it is a thinly veiled secret of all reductionists that they are skeptics at heart—i.e., they must deny the "reality" of everything). In his book "The Intentional Stance" and other writings he tries to eliminate this bothersome psychology that puts animals in a different class from computers and the universe by including our innate evolved intentionality with the derived intentionality of our cultural creations (i.e., thermometers, pc's and airplanes) by noting that it's our genes, and so ultimately nature (i.e., the universe), and not we that "really" has intentionality, and so it's all "derived". Clearly something is gravely amiss here! One thinks immediately that it must then also be true that since nature and genes produce our physiology, there must be no substantive difference between our heart and an artificial one we make from plastic. For the grandest reductionist comedy in recent years see Wolfram's "A New Kind of Science" which shows us how the universe and all its processes and objects are really just "computers" and "computation" (which he does not realize are

intentional concepts having no meaning apart from our psychology and that he has NO TEST to distinguish a computation from a noncomputation—i.e., he eliminates psychology by definition).

One sees that Dennett does not grasp the basic issues of intentionality by the title of his book. Our psychology is not a stance or attribution or posit about ourself, or other being's mental lives, any more than it's a "stance" that they possess bodies. A young child or a dog does not guess or suppose and does not and could not learn that people and animals are agents with minds and desires and that they are fundamentally different from trees and rocks and lakes. They know (live) these concepts (shared psychology) from birth and if they weaken, death or madness supervene.

This brings us again to W who saw that reductionist attempts to base understanding on logic or math or physics were incoherent. We can only see from the standpoint of our innate psychology, of which they are all extensions. Our psychology is arbitrary only in the sense that one can imagine ways in which it might be different, and this is the point of W inventing odd examples of language games (i.e., alternative concepts (grammars) or forms of life). In doing so, we see the boundaries of our psychology. The best discussion I have seen on W's imaginary scenarios is that of Andrew Peach in PI24: p299-327(2004).

It seems to me that W was the first one to understand in detail (with due respects to Kant) that our life is based on our evolved psychology, which cannot be challenged without losing meaning. If one denies the axioms of math, one cannot play the game.

One can place a question mark after every axiom and every theorem derived from them but what is the point? Philosophers, theologians and the common person can play at this game as long as they don't take it seriously. Injury, death, jail or madness will come quickly to those who do. Try to deny that you are reading this page or that these are your two hands or there is a world outside your window. The attempt to enter into a conceptual game in which these things can be doubted presupposes the game of knowing them—and

there cannot be a test for the axioms of our psychology—anymore than for those of math (derived, as W showed, from our intuitive concepts) --they just are what they are. In order to jump there must be some place to stand. This is the most basic fact of existence, and yet, it is a remarkable consequence of our psychology being automated that it is the hardest thing for us to see.

It is an amusing sight indeed to watch people (everyone, not just philosophers) trying to use their intuitive psychology (the only tool we have) to break out of the bounds of our intuitive psychology. How is this going to be possible? How will we find some vantage point that lets us see our mind at work and by what test will we know we have it? We think that if we just think hard enough or acquire enough facts we can get a view of "reality" that others do not have. But there is good reason to think that such attempts are incoherent and only take us further away from clarity and sanity. W said many times in many ways that we must overcome this craving for "clarity", the idea of thought underlaid by "crystalline logic", the discovery of which will "explain" our behavior and our world and change our view of what it is to be human.

"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 On his return to philosophy in 1930 he said:

"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." (Waismann "Ludwig Wittgenstein and the Vienna Circle (1979) p183 and in his Zettel P 312-314

"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."

Some might also find it useful to read "Why there is no deductive logic of practical reason" in Searle's superb "Rationality in Action" (2001). Just substitute his infelicitous phrases "impose conditions of satisfaction on conditions of satisfaction" by "relate mental states to the world by moving muscles"—i.e., talking, writing and doing, and his "mind to world" and "world to mind directions of fit" by "cause originates in the world" and "cause originates in the mind".

Another basic flaw in H (and throughout scientific discourse, which includes philosophy since it is armchair psychology) concerns the notions of explanations or causes. We have few problems understanding how these concepts work in their normal contexts but philosophy is not a normal context. They are just other families of concepts (often called grammar or language games by W and roughly equivalent to cognitive modules, inference engines, templates or algorithms) comprising our EP (roughly, our intentionality) but, out of context, we feel compelled to project them onto the world and see "cause" as a universal law of nature that determines events. As W said, we need to recognize clear descriptions as answers which terminate the search for ultimate "explanations".

This gets us back to my comment on WHY people go astray when they try to "explain" things. Again, this connects intimately with judgements, decision theory, subjective probability, logic, quantum mechanics, uncertainty, information theory, Bayesian reasoning, the Wason test, the Anthropic principle (Bostrum -"The Anthropic Principle" (2002)) and behavioral economics, to name a few. There is no space here to get into this rat's nest of

tightly linked aspects of our innate psychology, but one might recall that even in his pre-Tractatus writings, Wittgenstein commented that "The idea of causal necessity is not A superstition but the SOURCE of superstition". I suggest that this seemingly trite remark is one of his most profound –W was not given to platitude nor to carelessness. What is the "cause" of the Big Bang or an electron being at a particular "place" or of "randomness" or chaos or the "law" of gravitation? But there are descriptions which can serve as answers. Thus, H feels all actions must be caused and "material" and so, with his pal D and the merry band of reductionist materialists, denies will, self and consciousness. D denies that he denies them, but the facts speak for themselves. His book "Consciousness Explained" is commonly referred to as "Consciousness Denied" and was famously reviewed by Searle as "Consciousness Explained Away".

This is especially odd in H's case as he started out a physicist and his father won the Nobel prize in physics so one might think he would be aware of the famous papers of Einstein, Podolsky and Rosen and of von Neumann in the 20's and 30's, in which they explained how quantum mechanics did not make sense without human consciousness (and a digital abstraction won't do at all). In this same period others including Jeffreys and de Finetti showed that probability only made sense as a subjective (i.e., psychological) method and Wittgenstein's close friends John Maynard Keynes and Frank Ramsey first clearly equated logic with rationality, and Popper and others noted the equivalence of logic and probability and their common roots in rationality. There is a vast literature on interrelationships of these disciplines and the gradual growth of understanding that they are all facets of our innate psychology. Those interested might start with Ton Sales article inthe Handbook of Philosophical Logic 2nd Ed. Vol 9 (2002) since it will also introduce them to this excellent source, now extending to about 20 Volumes (all on p2p).

Ramsey was one of the few of his time who was capable of understanding W's ideas and in his seminal papers of 1925-26 not only developed Keynes' pioneering ideas on subjective probability, but also extended W's ideas from the Tractatus and conversations and letters into the first formal statement of

what later became known as substitutional semantics or the substitutional interpretation of logical quantifiers. (See Leblanc's article in Handbook of Philosophical Logic 2nd Ed. V2, p53- 131(2002)). Ramsey's premature death, like those of W, Von Neumann and Turing, were great tragedies, as each of them alone and certainly together would have altered the intellectual climate of the 20th century to an even greater degree. Had they lived, they might well have collaborated but as it was, only W realized he was discovering facets of our innate psychology. W and Turing were both Cambridge professors teaching classes on the Foundations of Mathematics—though W from the position that it rested on unstated axioms of our innate psychology and Turing from the conventional view that it was a matter of logic that stood by itself. Had these two homosexual geniuses become intimately involved, amazing things might have ensued.

I think everyone has these "deflationary" reductionist tendencies, so I suggest this is due to the defaults of intuitive psychology modules which are biased to assigning causes in terms of properties of objects, and cultural phenomena we can see and to our need for generality. Our inference engines compulsively classify and seek the source of all phenomena. When we look for causes or explanations, we are inclined to look outward and take the third person point of view, for which we have empirical tests or criteria, ignoring the automatic invisible workings of our own mind, for which we do not have such tests (another arena pioneered by W some 75 years ago). As noted here, one of W's takes on this universal "philosophical" problem was that we lack the ability to recognize our normal intuitive explanations as the limits of our understanding, confusing the untestable and unchallengeable axioms of our psychology with facts of the world which we can investigate, dissect and explain. This does not deny science, only the notion that it will provide the "true" and "real" meaning of "reality".

There is a vast literature on causes and explanations so I will only refer to Jeffrey Hershfield's excellent article "Cognitivism and Explanatory Relativity" in Canadian J. of Philosophy V28 p505-26(1998) and to Garfinkel's book "Forms of Explanation" (1981). This literature is rapidly fusing with those on epistemology, probability, logic, game theory, behavioral

economics, and the philosophy of science, which seem almost completely unknown to H. Out of the hundreds of recent books and thousands of articles, one can start on this with Nancy Cartwright's books, which provide a partial antidote to the "Physics and Math Rule the Universe" delusion. Or, one can just follow the links between rationality, causality, probability, information, laws of nature, quantum mechanics, determinism, etc. in Wikipedia and the online Stanford Encyclopedia of Philosophy, for decades (or, with W's comments in mind, maybe only days) before one realizes he got it right and that we do not get clearer about our psychological "reality" by studying nature. One way to look at ISL is that its faults remind us that scientific laws and explanations are frail and ambiguous extensions of our innate psychology and not, as H would have it, the reverse.

It is a curious and rarely noticed fact that the severe reductionists first deny psychology, but, in order to account for it (since there is clearly something that generates our mental and social life), they are forced into camp with the blank slaters (all of us before we get educated), who ascribe psychology to culture or to very general aspects of our intelligence (i.e., our intentionality is learned) as opposed to an innate set of functions. H and D say that self, consciousness, will, etc. are illusions—merely "abstract patterns" (the "spirit" or "soul" of the Church of Fundamentalist Naturalism). They believe that our "program" can be digitized and put into computers, which thereby acquire psychology, and that "believing" in "mental phenomena" is just like believing in magic (but our psychology is not composed of beliefs—which are only its extensions-- and nature is magical). I suggest it is critical to see why they never consider that "patterns" (another lovely language game!) in computers are magical or illusory. And, even if we allow that the reductionist program is really coherent and not circular (e.g., we are too polite to point out –as do W and Searle and many others—that it has NO TEST for it's most critical assertions and requires the NORMAL functioning of will, self, reality, consciousness etc., to be understood), can we not reasonably say "well Doug and Dan, a rose by any other name smells as sweet!" I don't think reductionists see that even were it true that we could put our mental life in algorithms running in silicon (or--in Searle's famous example—in a stack of beer cans), we still have the same "hard problem of consciousness": how do

mental phenomena emerge from brute matter? This would add yet another mystery with no obvious way to recognize an answer— what does it mean (why is it possible) to encode "emergent properties" as "algorithms"? If we can make sense out of the idea that the mind or the universe is a computer (i.e., can say clearly what counts for and against the idea), what will follow if it is or it isn't?

"Computational" is one of the major buzzwords of modern science, but few stop to think what it really means. It's a classic Wittgensteinian language game or family of concepts (uses) that have little or nothing in common. There are analog and digital computers, some made of blocks or mechanical gears only (Babbage etc.), we compute by hand (as is well known, Turing's first comments on this referred to humans who computed and only later did he think of machines simulating this), and physicists speak of leaves computing "their" trajectory as they fall from the tree, etc. etc. Each game has its own use (meaning) but we are hypnotized by the word into ignoring these. W has analyzed word games (psychological modules) with unsurpassed depth and clarity (see esp. the long discussion of knowing how to continue a calculation in the Brown Book), understanding of which should put an end to the superstitious awe which generally surrounds this word and all words, thoughts, feelings, intuitions etc.

It's dripping with irony that D's most recent book is on the EP of religion, but he cannot see his own materialism as a religion (ie, it's likewise due to innate conceptual biases). Timothy O'Connor has written (Metaphilosophy V36, p436- 448 (2005)) a superb article on D's Fundamentalist Naturalism (though he does not really get all the way to the EP point of view I take here), noting that simply accepting the emergence of intentionality is the most reasonable view to take. But pastors D and H read from the Churchland's books and the other bibles of CTM (Computational Theory of Mind) and exhort one and all to recognize their pc's and toaster ovens as sentient beings (or at least they soon will be). Pastor Kurzweil does likewise, but few attend his sermons as he has filled the pews with pc's having voice recognition and speech systems and their chorus of identical synthetic voices shout "Blessed be Turing" after every sentence. See my review of his book "Will Hominoids or Androids

Destroy the Earth? —A Review of How to Create a Mind" by Ray Kurzweil (2012) in the next section.

Emergence of "higher order properties" from "inert matter" (more language games!) is indeed baffling, but it applies to everything in the universe, and not just to psychology. Our brains had no reason (i.e., there are no selective forces operative) to evolve an advanced level of understanding of themselves or the universe, and it would be too genetically costly to do so. What selective advantage could there have been in seeing our own thought processes? The brain, like the heart, was selected to function rapidly and automatically and only a minute part of its operations are available to awareness and subject to conscious control. Many think there is no possibility of an "ultimate understanding" and W tells us this idea is nonsense (and if not then what test will tell us that we have reached it)?

Perhaps the last word belongs to Wittgenstein. Though his ideas changed greatly, there are many indications that he grasped the essentials of his mature philosophy in his earliest musings and the Tractatus can be regarded as the most powerful statement of reductionist metaphysics ever penned (though few realize it is the ultimate statement of computationalism). It is also a defensible thesis that the structure and limits of our intentional psychology were behind his early positivism and atomism. So, let us end with the famous first and last sentences of his Tractatus, seen as summarizing his view that the limits of our innate psychology are the limits of our understanding. "The world is everything that is the case." "Concerning that of which we cannot speak, we must remain silent."

Another cartoon portrait of the mind from the reductionist metaphysicians--a Review of Peter Carruthers 'The Opacity of Mind' (2011)

Michael Starks

ABSTRACT

Materialism, reductionism, behaviorism, functionalism, dynamic systems theory and computationalism are popular views, but they were shown by Wittgenstein to be incoherent. The study of behavior encompasses all of human life but behavior is largely automatic and unconscious and even the conscious part, mostly expressed in language (which Wittgenstein equates with the mind), is not perspicuous, so it is critical to have a framework which Searle calls the Logical Structure of Rationality (LSR) and I call the Descriptive Psychology of Higher Order Thought (DPHOT). After summarizing the framework worked out by Wittgenstein and Searle, as extended by modern reasoning research, I show the inadequacies in Carruthers' views, which pervade most discussions of behavior including contemporary behavioral sciences. I maintain that his book is an amalgam of two books, one a summary of cognitive psychology and the other a summary of the standard philosophical confusions on the mind with some new jargon added. I suggest that the latter should be regarded as incoherent or as a cartoon view of life and that taking Wittgenstein at his word, we can practice successful self-therapy by regarding the mind/body issue as a language/body issue.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

I will first offer some comments on philosophy and its relationship to contemporary psychological research as exemplified in the works of John

Searle (S) and Ludwig Wittgenstein (W) (jointly WS) as I consider S the successor to W and one must study their work together. It will help to see my reviews of PNC (Philosophy in a New Century), TLP, PI, OC, Making the Social World (MSW) and other books by and about these two geniuses, who provide a clear description of behavior that I will refer to as the WS framework. Only given this framework, which Searle calls the Logical Structure of Rationality (LSR) and I call the Descriptive Psychology of Higher Order Thought (DPHOT), is it possible to have clear descriptions of behavior but it is entirely missing from nearly all discussions of behavior.

Even in the works of WS it is not laid out clearly and in virtually all others it is only hinted at, with the usual disastrous consequences. I will begin with some quotes from W and S. These quotes are not chosen at random but result from a decade of study and together they are an outline of behavior (human nature) from our two greatest descriptive psychologists. If one understands them, they penetrate as deeply as it is possible to go into the mind (largely coextensive with language as W made clear) and provide as much guidance as one needs—it is then just a matter of looking at how language works in each case and by far the best place to find perspicuously analyzed examples of language is in the 20,000 pages of Wittgenstein's Nachlass.

"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 in the way science does. This tendency is the real source of metaphysics, and leads the philosopher into complete darkness." Wittgenstein The Blue Book

"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

"The decisive movement in the conjuring trick has been made, and it was the very one we thought quite innocent." Wittgenstein, PI para.308

"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

"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)

"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." Wittgenstein 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." Wittgenstein PI 126

"What we are supplying are really remarks on the natural history of man, not curiosities; however, but rather observations on facts which no one has doubted and which have only gone unremarked because they are always before our eyes." Wittgenstein RFM I p142

"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 (this has to do with the Kantian solution to the problem of philosophy)." Wittgenstein CV p10 (1931)

"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

"...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

"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

"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

"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

"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

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 (S3).

Searle's (S) work as a whole provides a stunning description of higher order S2/S3 social behavior which is due to the recent evolution of genes for dispositional psychology, while the later Wittgenstein (W) shows how it is based on true-only unconscious axioms of S1 which evolved into conscious dispositional propositional thinking of S2.

S1 is the simple automated functions of our involuntary, System 1, fast thinking, mirror neuron, true-only, non- propositional, mental states- our perceptions and memories and reflexive acts 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 linguistic functions 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 just a fact that attempts to describe System 2 in terms of neurochemistry, atomic physics, mathematics, make no sense--see W for many examples and Searle and Hacker (Human Nature)for disquisitions).

One should take seriously W's comment that even if God could look into our mind he could not see what we are thinking--this should be the motto of Cognitive Psychology. Yes, a cognitive psychologist of the future may be able to see what we are perceiving and remembering and our reflexive thinking and acting, since these S1 functions are always causal mental states (CMS) but S2 dispositions are only potentially CMS and so not realized or visible. This is not a theory but description of our language, mind, life, grammar (W). S, Carruthers (C) and others muddy the waters here because they sometimes refer to dispositions as mental states as well, but as W did long ago, S, Hacker and others show that the language of causality just does not apply to the higher order emergent S2 descriptions-- again not a theory but a description of how our dispositional states (language, thinking) work.

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). 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 evolved psychology (EP) which seeks explanations in terms of what we can deliberately think through slowly (S2),

rather than in the automated S1, of which we mostly remain oblivious--called by S in PNC `The Phenomenological Illusion' (TPI). TPI is not a harmless philosophical error but a universal obliviousness to our biology which produces the illusion that we control our life and among the consequences are the inexorable collapse of what passes for civilization.

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 (or not in the same sense as S1 states), and do not have any definite time of occurrence and/or duration. But disposition words like "knowing", "understanding", "thinking", "believing", which W discussed extensively, have at least two basic uses. One is a peculiar 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')--i.e., they are Causally Self Referential (CSR)—i.e., to see a cat makes it true and in the normal case no test is possible, 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 external, public, testable Conditions of Satisfaction (COS) and are not CSR.

The investigation of involuntary fast thinking of System 1 has revolutionized psychology, economics 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 presumably not ever of slow System 2 dispositional thinking only, since any System 2 thought or intentional action cannot occur without involving much of the intricate network of "cognitive modules", "inference engines", "intracerebral reflexes", "automatisms", "cognitive axioms", "background" or "bedrock" --as W and later Searle call our Evolutionary Psychology (EP).

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.

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 (S3). I expect this fairly well describes the basic structure of behavior.

These descriptions of cognition and volition are summarized in Table 2.1 of MSW, which Searle has used for many years and is the basis for an extended one I have created. In my view, it helps enormously to relate this to modern psychological research by using my S1, S2, S3 terminology and W's true-only vs propositional (dispositional) description. Thus, CSR references S1 true-only perception, memory and prior intention, while S2 refers to dispositions such as belief and desire.

So, recognizing that S1 is only upwardly causal (world to mind) and contentless (lacking representations or information) while S2 has content and is downwardly causal (mind to world) (e.g., see my review of Hutto and Myin's `Radical Enactivism'), I would change the paragraphs from 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. 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 decoupled from intention) and other S2 propositional dispositions of our slow thinking later evolved second self, are totally dependent upon (have their COS originating in) the 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 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. S1 and S2 feed into each other and are often orchestrated seamlessly by the learned deontic cultural relations of S3, 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.'

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. Like Carruthers and others, S sometimes 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 demonstrates, 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.

Thinking is propositional and so deals with true or false statements, which means that it is a typical S2 disposition which can be tested, as opposed to the true-only automatic cognitive functions of S1. Or you can say that spontaneous utterances and actions are the primitive reflexes or Primary Language Games (PLG) of S1, while conscious representations are the dispositional Secondary Language Games (SLG's) of S2. It sounds trivial and indeed it is, but this is the most basic statement of how behavior works and hardly anyone has ever understood it.

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, 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)." And I would restate his description on p129 of how we carry out DIRA2/3 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 DIRA2/3, but these are very restricted extensions of unconscious DIRA1 (the ultimate cause).

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 into 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 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/S3 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.

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. This can be seen as another statement of W's argument against private language (personal interpretations vs publicly testable ones). Likewise, with rule following and interpretation --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, and it this which underlies all behavior and which is schematized in the table.

As I have noted in my other reviews, few if any have fully understood the later W and, lacking the S1, S2 framework it is not surprising. Thus, one can understand why one cannot imagine an object while seeing it as the domination of S2 by S1. There is no test for my inner experiences, so whatever comes to mind when I imagine Jack's face is 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 the lack of any test makes them inapplicable. Two of W's famous examples used for combatting this temptation are 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 another of W's famous comments--"The decisive movement in the conjuring trick has been made, and it was the very one we thought quite innocent." That is, the first few sentences or often the title commit one to a way of looking at things (a language game) which prevents clear use of language in the present context.

A sentence expresses a thought (has a meaning), when it has clear COS, and this means has 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) "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 interpreted as the logical structure of language, 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.

Likewise, with the question "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," or as S says its COS. Hence W's summation (p140 Budd) 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 Potential Events (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. 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.

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

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

The Logical Structure of Rationality (LSR), or the Logical Structure of Mind (LSM), the Logical Structure of Behavior (LSB), the Logical Structure of Thought (LST), the Logical Structure of Consciousness (LSC), the Logical Structure of Personality (LSP), the Descriptive Psychology of Consciousness (DSC), the Descriptive Psychology of Higher Order Thought (DPHOT), Intentionality-the classical philosophical term.

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)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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 Prior Intentions

*** Searle's Intention In Action

**** Searle's Direction of Fit

***** Searle's Direction of Causation

****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly called this causally self- referential.

******* Tversky/Kahneman/Frederick/Evans/Stanovich defined cognitive systems.

******** Here and Now or There and Then

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

Those wishing a comprehensive up to date account of Wittgenstein, Searle and their analysis of 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 (2016).

EXPLANATION OF THE TABLE

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 that can be described as Primary or Primitive Language Games (PLG's)—i.e., one class of reflexes of the fast associative unconscious automated System 1, subcortical, nonrepresentational, causally self-referential, intransitive, informationless, true only mental states with a precise time and location) and gradually developed the further ability to encompass displacements in space and time to describe memories, attitudes and potential events (the past and future and often counterfactual, conditional or fictional preferences, inclinations or dispositions-the Secondary or Sophisticated Language Games (SLG's) of System 2 slow, cortical, conscious, information containing, transitive (having public COS), representational, true or false propositional attitudinal thinking, which has no precise time and are abilities and not mental states). Preferences are Intuitions, Tendencies, Automatic Ontological Rules, Behaviors, Abilities, Cognitive Modules, Personality Traits, Templates, Inference Engines, Inclinations, Emotions, Propositional Attitudes, Appraisals, Capacities, Hypotheses. Some Emotions are Type 2 Preferences (W RPP2 148). "I believe", "he loves", "they think" are descriptions of possible public acts typically displaced in spacetime. My first-person statements about myself are true-only (excluding lying) while third person statements about others are true or false (see my review of Johnston 'Wittgenstein: Rethinking the Inner').

"Preferences" as a class of intentional states --opposed to perceptions, reflexive acts and memories-- were first clearly described by Wittgenstein (W) in the 1930's and termed "inclinations" or "dispositions". They have commonly been termed "propositional attitudes" since Russell but this is a misleading phrase since believing, intending, knowing, remembering etc., are often not propositions nor attitudes, as has been shown e.g., by W and by Searle (e.g., cf Consciousness and Language p118). They are intrinsic, observer independent mental representations (as opposed to presentations or representations of System 1 to System 2 – Searle- C+L p53).

They are potential acts displaced in time or space while the evolutionarily more primitive S1 perceptions memories and reflexive actions are always here and now. This is one way to characterize System 2 –the major advance in vertebrate psychology after System 1—the ability to represent events and to think of them as occurring in another place or time (Searle's third faculty of counterfactual imagination supplementing cognition and volition). S2 dispositions are abilities to act (contract muscles producing speech or body movements via S1 at which time they become causal and mental states). Sometimes dispositions may be regarded as unconscious since they can become conscious later-Searle- Phil Issues 1:45-66(1991).

Perceptions, memories and reflexive (automatic) actions can be described as S1 or Primary Language Games's (PLG's --e.g., I see the dog) and there are, in the normal case, NO TESTS possible so they can be True Only.

Dispositions can be described as secondary LG's (SLG's –e.g. I believe I see the dog) and must also be acted out, even for me in my own case (i.e., how do I KNOW what I believe, think, feel until I act—see above quotes from W). Dispositions also become Actions when spoken or written as well as being acted out in other ways, and these ideas are all due to Wittgenstein (mid 1930's) and are NOT Behaviorism (Hintikka & Hintikka 1981, Searle, Hutto 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. Though few have understood it well (and arguably nobody fully to this day) it was further developed by a few --above all by John Searle, who made a simpler version of 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), cognitive linguistics or DPHOT, and in my view the single most important work in philosophy (descriptive psychology) and thus in the study of behavior. Perception, Memory, Reflexive actions and Basic Emotions are primitive partly Subcortical Involuntary Mental States, that can be described in PLG's, in

which the mind automatically fits the world (is Causally Self Referential—Searle) --the unquestionable, true only, axiomatic basis of rationality over which no control is possible). 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 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 with Secondary Language Games (SLG's) which S calls The Phenomenological Illusion (TPI). W understood this and described it with unequalled clarity with hundreds of examples of language (the mind) in action throughout his works. Reason has access to working memory and so we use consciously apparent but typically incorrect reasons to explain behavior (the Two Selves of current research). Beliefs and other Dispositions 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, and 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., C+L p145, 190).

Sometimes there are gaps in reasoning to arrive at belief and other dispositions. Inclination words can be used as nouns which seem to describe mental states (e.g. belief), or as verbs which describe abilities (agents as they act or might act) (e.g., believing) 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—(actual or potential PUBLIC ACTS 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).

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, Dreaming (S1)

Preferences, Inclinations, Dispositions (X might become True) (S2)

CLASS 1: 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--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.

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

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

ACTIONS (I am making "X" True) : Acting, Speaking , Reading, Writing, Calculating, Persuading, Showing, Demonstrating, Convincing, Doing Trying, Attempting, Laughing, Playing, Eating, Drinking, Crying, Asserting(describing, teaching, predicting, reporting), Promising , Making or Using Maps, Books, Drawings, Computer Programs–these are Public and Voluntary and transfer Information to others so they dominate over the Unconscious, Involuntary and Informationless S1 reflexes in explanations of behavior.

We drive a car but also own it, see it, see its photo, dream about it, imagine it, expect it, remember it. 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 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 andmore efficient. Hajek (2003) gives an analysis of dispositions as conditional probabilities and they are algorithmatized by Spohn etc.

Intentionality (cognitive or evolutionary psychology) consists of various aspects of behavior which are innately programmed into cognitive modules (however defined) which create and require consciousness, will and self and in normal human adults all dispositions are purposive, require public acts (e.g., language), and commit us to relationships (called Desire Independent Reasons for Action- DIRA by Searle) in order to increase our inclusive fitness (maximum expected utility— sometimes called-controversially-Bayesian utility maximization) via dominance and reciprocal altruism and impose Conditions of Satisfaction on Conditions of Satisfaction -Searle-(i.e., relate thoughts to the world via public acts (muscle movements –i.e., 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 ("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), and with refinements by many, but above all by John Searle beginning in the 1960's. Much of our S2 intentionality admits of degrees or kinds (principally language games). As W noted, inclinations (e.g. thinking) 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")—non-rational 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 RPP2 129). 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 (inclinations, propositional attitudes) is not a mental state, and contains no information until it becomes a public act (realizes a COS) in speech, writing or other muscular contractions. Our perceptions and memories can have information (meaning-COS) when they are manifested in public actions via S2, for only then do they 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. Developing language means manifesting the innate ability to substitute words for acts. The common term TOM (Theory of Mind) is much better called (UA-Understanding ofAgency).

Intentionality is the innate genetically programmed production of consciousness, self, and thought which leads to intentions and then to actions by contracting muscles. Thus, "propositional attitude" is a confusing term for normal intuitive rational or non-rational speech and action but I give it as a synonym for dispositions as it's still widely used by those unfamiliar with W

and S. 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 was evolved to facilitate social interaction and thus the gathering of resources, survival and reproduction. Its grammar functions automatically and is extremely confusing when we try to analyze it. Words and sentences have multiple uses depending on context. I believe and I eat have profoundly different roles as do I believe and I believed or I believe and he believes. The present tense first person expressive use of inclinational verbs such as "I believe" describe my ability to predict my probable acts and are not descriptive of my mental state nor based on knowledge or information in the usual sense of those words (W). "I believe its raining", "I believed it was raining", "he believes it's raining", "he will believe it's raining,", "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) and so have COS which are their truth (or falsity) makers.

Non-reflective or Non-rational (automatic) words spoken without Prior Intent have been called Words as Deeds by W & then by DMS in her paper in Philosophical Psychology in 2000) are typical of much of our behavior as they bridge S1 and S2 which interact in both directions most of our waking life.
Perceptions, Memories, some Emotions and many "Type 1 Dispositions" are better called Reflexes of S1 and are automatic, non-reflective, NON-Propositional and NON-Attitudinal functioning of the hinges (axioms, algorithms) of our Evolutionary Psychology (Moyal-Sharrock after Wittgenstein).

Now for some comments on "The Opacity of Mind" (OM).
By the time I finished the first page of the preface, I realized this book was just another hopeless mess (the norm in philosophy). He made it clear that he had no grasp of the subtlety of language games (e.g., the drastically different uses of 'I know I'm awake', 'I know what I mean' and 'I know what time it is') nor the nature of dispositions (which he calls by the misleading and obsolete term 'propositional attitudes') and was basing his ideas about behavior on such notions as private language, introspection of 'inner speech' and the computational description of mind, which were laid to rest by W ¾ of a century ago and by S and many others since. But I knew most books on human behavior are just as confused and that he was going to give a summary of recent scientific work on the brain functions corresponding to higher order thought (HOT), so I kept on.

Before I read any book in philosophy or cognitive science, I go to the index and bibliography to see whom they cite and then try to find some reviews and especially an article in BBS since it has peer feedback, which is generally highly informative. As noted above, W and S are two of the most famous names in this field but in the index and bibliography I found only 3 trivial mentions of W and not one for S or Hacker—surely the most remarkable achievement of this volume. As expected, several reviews from philosophical journals were useless and the BBS responses to his précis of this book appear devastating--though, characteristically (with the exception of one mention of W) -- they too are clueless about WS. More remarkable, though he includes many references as recent as 2012, the 2009 BBS article is not among them and, so far as I can recall, he does not provide substantive responses to its criticisms in this book. Consequently, the powerful WS inspired LSR framework is totally absent and all the confusions it has cleared away are abundant on nearly every page. If you read the above and my other reviews and then the BBS article (readily available free on the net) your view of this book (and most writing in this arena) will likely be quite different. Of course, the major defect of BBS is apparent--- the commenters get only a one page comment and no reply, while the authors get a long article and a long reply, so it always appears that they prevail. It is clear however that C's ISA theory,

like most (all?) philosophical theories is a shape shifter which alters to "explain" every objection. Thus, the line between a meaningful theory (actually a description) tied to facts and a vague notion that "explains" nothing blurs. Of course, C often says that his theory "predicts" such and such observation but this appears to occur after the fact and of course the opposing theories shape shift as well. A powerful theory predicts things which nobody was expecting and even the opposite of what they were expecting. We are also reminded of W's constant injunctions to stick to describing the facts and avoid otiose "explanations".

W's definitive arguments against introspection and private language are noted in my other reviews and are extremely well known. Basically, they are as clear as day—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 it could 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 Carruthers' (C's) ISA theory of mind, as well as all the other 'inner sense' theories which he references and a huge # of other books and articles. 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 S's books. Basically, he showed that the causal relation and word and object model that works for S1 does not apply to S2.

Regarding ISA, 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."

One thing to keep in mind is that philosophical theories have no practical impact whatsoever- the real role of philosophy being to clear up confusions about how language is being used in particular cases (W). Like various 'physical theories' but unlike other cartoon views of life (i.e., the standard religious, political, psychological, sociological, biological, medical, economic, anthropological and historical views of most people), 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 or Blank Slate 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 (our innately inspired psychological 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. All of us could be said to have 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' in this book, 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' (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 you 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') which C promotes.

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 probably say of most philosophical accounts of behavior. The WS 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 WS, 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) of representing (i.e., the same form as for all dispositional nouns and their verbs) 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) 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. WS 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". This is in my view the difference between an accurate description of language use and the use one can imagine in a cartoon.

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 Churchlands 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 C 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. 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 and scientists whose reading of W was fruitless—Russell, Quine, Godel, Kreisel, Chomsky, Dummett, Kripke, Dennett, Putnam etc. (though Putnam began to see the light later). They just cannot see that most philosophy is grammatical jokes and impossible vignettes—a cartoon view of life.

Books like this that attempt to bridge 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 WS 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, Sartre, 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 WS, 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 very end, when we are told that self, will, consciousness (in the senses in which these words normally function) are illusions (supposedly in the normal sense of this word). Dennett had to be unmasked by S, Hutto et al for explaining away these 'superstitions' (i.e., not explaining at all and in fact not even describing) but amazingly C also 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 Hacker's criticisms of cog sci with replies by S and Dennett in "Neuroscience and Philosophy" and well explored in Hacker's books "Human Nature" and "Philosophical Foundations of Neuroscience" (see my reviews). It is remarkable that virtually nobody in all the behavioral disciplines (in which I include literature, history, politics, religion, law, art etc., as well as the obvious ones) ever states either their logical framework or what it is that they are trying to accomplish and what role language analysis and science play, so all those interested in behavior might consider memorizing Hacker's lovely summary of what philosophy (DPHOT) aims to do and how this relates to scientific pursuits.

"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, recognising, 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). Of course, I would add that it is the study of our evolved psychology, of DPHOT, of the contextual sensitivity of language (W's language games). It is not trivial to state these facts as it is quite rare to find anyone who grasps the big picture and even my hero's such as Searle, Priest, Pinker, Read, etc. fall embarrassingly short when they try to define their professions.

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 algorithmic randomness of math (Godel/Chaitin—see my review of Yanofsky's 'The Outer Limits of Reason') 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. And once again W from the Blue Book-"Philosophers constantly see the method of science before their eyes, and are irresistibly tempted to ask and answer in the way science does. This tendency is the real source of metaphysics, and leads the philosopher into complete darkness." It is hard to resist throwing down most books on behavior and rereading W and S. Just jump from anything to e.g. these quotes from PI http://topologicalmedialab.net/xinwei/classes/readings/Wittgenstein/pi_94-138_239-309.html.

I suggest viewing the question of mind as essentially the same as all the 'deep' philosophical questions. We want to understand the 'reality' perceived by S1, 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 trillions of organisms over some 3 billion years. So, we struggle with science and ever so slowly describe the mechanisms of mind (i.e., of brain), knowing that even should we arrive at "complete" knowledge of the brain, we would just have a description of what neuronal pattern corresponds to seeing red or making a choice and an "explanation" of why is not possible (not intelligible).

It is obvious to me after reading tens of thousands of pages of philosophy 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 I believe he makes a few major 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 over the next two centuries.

I hesitate to recommend C's writings to anyone, as the experienced ought to have about the same perspective I do, and the naïve will be wasting their time. Either read philosophy or cognitive science and avoid the amalgams.

Among the endless books and articles available, I commend the 3 volumes on Human Nature edited by Carruthers (yes, the same), the 3 on Human Nature written by Hacker, the Handbook of Evolutionary Psychology 2nd Ed, and my reviews of W/S, Hutto, DMS, Hacker et al. and the original books. Finally, I suggest that if we accept W's equation of language and mind and regard the 'mind/body problem' as the 'language/body problem' it may help achieve his therapeutic aim.

MATHEMATICS, PHYSICS AND COMPUTERS

What Do Paraconsistent, Undecidable, Random, Computable and Incomplete mean? A Review of Godel's Way: Exploits into an undecidable world by Gregory Chaitin, Francisco A Doria, Newton C.A. da Costa 160p (2012)

Michael Starks

ABSTRACT

In 'Godel's Way', three eminent scientists discuss issues such as undecidability, incompleteness, randomness, computability and paraconsistency. I approach these issues from the Wittgensteinian viewpoint that there are two basic issues which have completely different solutions. There are the scientific or empirical issues, which are facts about the world that need to be investigated observationally and philosophical issues as to how language can be used intelligibly (which include certain questions in mathematics and logic), which need to be decided by looking at how we actually use words in particular contexts. When we get clear about which language game we are playing, these topics are seen to be ordinary scientific and mathematical questions like any others. Wittgenstein's insights have seldom been equaled and never surpassed and are as pertinent today as they were 80 years ago when he dictated the Blue and Brown Books. In spite of its failings—really a series of notes rather than a finished book—this is a unique source of the work of these three famous scholars who have been working at the bleeding edges of physics, math and philosophy for over half a century. Da Costa and Doria are cited by Wolpert (see below or my articles on Wolpert and my review of Yanofsky's 'The Outer Limits of Reason') since they wrote on universal computation and among his many accomplishments, Da Costa is a pioneer in paraconsistency.

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Chaitin's proof of the algorithmic randomness of math (of which Godel's results are a corollary) and the Omega number are some of the most famous mathematical results in the last 50 years and he has documented them in many books and articles. His coauthors from Brazil are less well known in spite of their many important contributions. For all the topics here, the best way to get free articles on the cutting edge is to visit ArXiv.org, viXra.org, academia.edu, citeseerx.ist.psu.edu or philpapers.org, Researchgate.net etc., where there are tens of thousands of preprints on every topic (be warned this may use up all your spare time for the rest of your life!).

As readers of my other articles are aware, in my view there are two basic issues running throughout philosophy and science which have completely different solutions. There are the scientific or empirical issues, which are facts about the world that need to be investigated observationally, and philosophical issues as to how language can be used intelligibly, which need to be decided by looking at how we actually use certain words in particular contexts and how these are extended to new uses in new contexts. Unfortunately, there is almost no awareness that these are two different tasks and so this work, like all scientific writing that has a 'philosophical' aspect, mixes the two with unfortunate results. And then there is scientism, which we can here take as the attempt to treat all issues as scientific ones and reductionism which tries to treat them as physics and/or mathematics. Since I have noted in my reviews of books by Wittgenstein (W), Searle and others, how an understanding of the language used in what Searle calls the Logical Structure of Reality (LSR) and I call the Descriptive Psychology of Higher Order Thought (DPHOT), along with the Dual Process Description (the Two Systems of Thought) helps to clarify philosophical problems, I will not repeat

the reasons for that view here.
Since Godel's theorems are corollaries of Chaitin's theorem showing algorithmic randomness (incompleteness) throughout math (which is just another of our symbolic systems that may result in public testable actions-i.e., if meaningful it has COS), it seems inescapable that thinking (dispositional behavior having COS) 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' (another group of language games) 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, and 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.

Regarding Godel and "incompleteness", since our psychology as expressed in symbolic systems such as math and language is "random" or "incomplete" and full of tasks or situations ("problems") that have been proven impossible (i.e., they have no solution-see below) or whose nature is unclear, it seems unavoidable that everything derived from it by using higher order thought (system 2 or S2) to extend our innate axiomatic psychology (system 1 or S1) into complex social interactions such as games, economics, physics and math, will be "incomplete" also.

The first of these in what is now called Social Choice Theory or Decision Theory (which are continuous with the study of logic and reasoning and philosophy) was the famous theorem of Kenneth Arrow 63 years ago, and there have been many since such as the recent impossibility or incompleteness proof by Brandenburger and Kreisel (2006) in two-person game theory. In these cases, a proof shows that what lookslike a simple choice

stated in plain English has no solution. There are also many famous "paradoxes" such as Sleeping Beauty (dissolved by Rupert Read), Newcomb's problem (dissolved by Wolpert) and Doomsday, where what seems to be a very simple problem either has no one clear answer, or it proves exceptionally hard to find. A mountain of literature exists on Godel's two "incompleteness" theorems and Chaitin's more recent work, but I think that W's writings in the 30's and 40's are definitive. Although Shanker, Mancosu, Floyd, Marion, Rodych, Gefwert, Wright and others have done insightful work in explaining W, it is only recently that W's uniquely penetrating analysis of the language games being played in mathematics and logic have been clarified by Floyd (e.g., 'Wittgenstein's Diagonal Argument-a Variation on Cantor and Turing'), Berto (e.g., 'Godel's Paradox and Wittgenstein's Reasons' , and 'Wittgenstein on Incompleteness makes Paraconsistent Sense' , and Rodych (e.g., 'Wittgenstein and Godel: the Newly Published Remarks' and 'Misunderstanding Gödel :New Arguments about Wittgenstein and New Remarks by Wittgenstein'). Berto is one of the best recent philosophers, and those with time might wish to consult his many other articles and books including the volume he co- edited on paraconsistency. Rodych's work is indispensable, but only two of a dozen or so papers are free online (but see libgen.io or bookzz.org and also his Stanford Encyclopedia of Philosophy articles).

Berto notes that W also denied the coherence of metamathematics-i.e., the use by Godel of a metatheorem to prove his theorem, likely accounting for W's "notorious" interpretation of Godel's theorem as a paradox, and if we accept W's 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) as metamathematics, undecidability 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 a la Dennett, Carruthers, the Churchland's 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 thoughout 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 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 (from which results follow necessarily and algorithmically), and this is utterly different from empirical matters where one applies a test (the results of which are unpredictable and debatable). 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 Peano Arithmetic, it cannot be used in the real world either. As 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 makes many other penetrating comments (see Rodych and Floyd). Of course, the same remarks apply to all forms of logic and any other symbolic system.

As Rodych, Berto and Priest (another pioneer in paraconsistency) have noted, W was the first (by several decades) to insist on the unavoidability and utility of inconsistency (and debated this issue with Turing during his classes on the Foundations of Mathematics). We now see that the disparaging comments about W's remarks on math made by Godel, Kreisel, Dummett and many others were misconceived. As usual, it is a very bad idea to bet against W. Some may feel we have strayed off the path here—after all in 'Godel's Way' we only want to understand 'science' and 'mathematics' (in quotes because part of the problem is regarding them as 'systems') and why these 'paradoxes' and 'inconsistencies' arise and how to dispose of them. But I claim that is exactly what I have done by pointing to the work of W. Our symbolic systems (language, math, logic, computation) have a clear use in the

narrow confines of everyday life, in what we can loosely call the mesoscopic realm--the space and time of normal events we can observe unaided and with certainty (the innate axiomatic bedrock or background as W and later Searle call it). But we leave coherence behind when we enter the realms of particle physics or the cosmos, relativity, math beyond simple addition and subtraction with whole numbers, and language used out of the immediate context of everyday events. The words or whole sentences may be the same, but the meaning is lost (i.e., to use Searle's preferred term, their Conditions of Satisfaction (COS) are changed or opaque). It looks to me like the best way to understand philosophy is to enter it via Berto, Rodych and Floyd's work on W, so as to understand the subtleties of language as it is used in math and thereafter "metaphysical" issues of all kinds may be dissolved. As Floyd notes "In a sense, Wittgenstein is literalizing Turing's model, bringing it back down to the everyday and drawing out the anthropomorphic command-aspect of Turing's metaphors."

W pointed out how in math, we are caught in more LG's (Language Games) where it is not clear what "true", "complete", "follows from", "provable", "number", "infinite", etc. mean (i.e., what are their COS or truthmakers in THIS context), and hence what significance to attach to 'incompleteness' and likewise for Chaitin's "algorithmic randomness". As W noted frequently, do the "inconsistencies" of math or the counterintuitive results of metaphysics cause any real problems in math, physics or life? The apparently more serious cases of contradictory statements –e.g., in set theory---have long been known but math goes on anyway. Likewise for the countless liar (self-referencing) paradoxes in language and in the "incompleteness" and "inconsistency" (groups of complex LG's) of mathematics as well.

It is a constant struggle to keep in mind that different contexts mean different LG's (meanings, COS) for "time", "space", "particle" "object" , "inside", "outside", "next", "simultaneous", "occur", "happen", "event" ,"question", "answer" ,"infinite", "past", "future", "problem", "logic", "ontology", "epistemology", "solution", "paradox","prove", "strange", "normal", "experiment", "complete", "uncountable", "decidable", "dimension", "complete", "formula", "process", "algorithm", "axiom", "mathematics",

“number”, “physics”, “cause”, “place”, “same”,“moving”, “limit”, “reason”, “still”, “real” “assumption”, “belief”, ‘know”, “event”, ”recursive”, “meta—“, “self- referential” “continue”, “particle”, “wave”,, “sentence” and even (in some contexts) “and”, “or”, “also”, “add” , “divide”, “if…then”, “follows” etc.

As W noted, most of what people (including many philosophers and most scientists) haveto say when philosophizing is not philosophy but its raw material. Chaitin, Doria, and Da Costa join Yanofsky (Y), Hume, Quine, Dummett, Kripke, Dennett, Churchland, Carruthers, Wheeler etc. in repeating the mistakes of the Greeks with elegant philosophical jargon mixed with science. I suggest quick antidotes via my reviews and some Rupert Read such as his books ‘A Wittgensteinian Way with Paradoxes’ and ‘Wittgenstein Among the Sciences’, or go to academia.edu and get his articles , especially ‘Kripke’s Conjuring Trick’ and ‘Against Time Slices’ and then as much of Searle as feasible, but at least his most recent such as ‘Philosophy in a New Century’, ‘Searle’s Philosophy and Chinese Philosophy’, ‘Making the Social World’ and ‘Thinking About the Real World’ (or at least my reviews) and his forthcoming volume on perception. There are also over 100 youtubes of Searle, which confirm his reputation as the best standup philosopher since Wittgenstein.

A 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 Wolpert— see my article on his work) it is the most far reaching (or just trivial/incoherent) but there have been an avalanche of others. As noted, 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.

Another recent famous impossibility result is that 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. But note W's characterization of 'thinking' as a potential action with COS, which says they don't really have a meaning (use), like Chaitin's infinity of apparently well-formed formulas that do not actually belong to our system of mathematics. "Ann believes that Bob assumes that Ann believes that Bob's assumption is wrong" seems unexceptionable and multiple layers of 'recursion' (another LG) have been assumed in argumentation, linguistics, philosophy etc., for a century at least, but B&K 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 one person or multiplayer decision situations (e.g., they grade 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 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 (Y'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 of Y's and so Y 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).

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 proofs 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 noticedand I have looked in dozens of recent books on physics, math, decision theory and computation without finding a reference.

W's prescient grasp of these issues, including his embrace of strict finitism and paraconsistency, is finally spreading through math, logic and computer science (though rarely with any acknowledgement). Bremer has recently suggested the necessity of a Paraconsistent Lowenheim-Skolem Theorem. "Any mathematical theory presented in first order logic has a finite paraconsistent model." Berto continues: "Of course strict finitism and the insistence on the decidability of any meaningful mathematical question go hand in hand. As Rodych has remarked, the intermediate Wittgenstein's view is dominated by his 'finitism and his view […] of mathematical meaningfulness as algorithmic decidability' according to which '[only] finite logical sums and products (containing only decidable arithmetic predicates) are meaningful because they are algorithmically decidable.'". In modern terms this means they have public conditions of satisfaction (COS)-i.e., can be stated as a proposition that is true or false. And this brings us to W's view that ultimately everything in math and logic rests on our innate (though of course extensible) ability to recognize a valid proof. Berto again: "Wittgenstein believed that the naïve (i.e., the working mathematician's) notion of proof had to be decidable, for lack of decidability meant to him simply lack of mathematical meaning: Wittgenstein believed that everything had to be decidable in mathematics…Of course one can speak against the decidability of the naïve notion of truth on the basis of Godel's results themselves. But one may argue that, in the context, this would beg the question against paraconsistentists-- and against Wittgenstein too. Both Wittgenstein and the paraconsistentists on one side, and the followers of the standard view on the other, agree on the following thesis: the decidability of the notion of proof and its inconsistency are incompatible. But to infer from this that the naïve notion of proof is not decidable invokes the indispensability of consistency, which is exactly what Wittgenstein and the paraconsistent argument call into question...for as Victor Rodych has forcefully argued, the consistency of the relevant system is precisely what is called into question by Wittgenstein's reasoning." And so: "Therefore the

Inconsistent arithmetic avoids Godel's First Incompleteness Theorem. It also avoids the Second Theorem in the sense that its non-triviality can be established within the theory: and Tarski's Theorem too—including its own predicate is not a problem for an inconsistent theory" [As Graham Priest noted over 20 years ago].

This brings to mind W's famous comment.

"What we are 'tempted to say' in such a case is, of course, not philosophy, but it is its raw material. Thus, for example, what a mathematician is inclined to say about the objectivity and reality of mathematical facts, is not a philosophy of mathematics, but something for philosophical treatment." PI 234

And again, 'decidability' comes down to the ability to recognize a valid proof, which rests on our innate axiomatic psychology, which math and logic have in common with language. And this is not just a remote historical issue but is totally current. I have read much of Chaitin and never seen a hint that he has considered these matters. The work of Douglas Hofstadter also comes to mind. His Godel, Escher, Bach won a Pulitzer prize and a National Book Award for Science, sold millions of copies and continues to get good reviews (e.g. almost 400 mostly 5 star reviews on Amazon to date) but he has no clue about the real issues and repeats the classical philosophical mistakes on nearly every page. His subsequent philosophical writings have not improved (he has chosen Dennett as his muse), but, as these views are vacuous and unconnected to real life, he continues to do excellent science.

Once again note that "infinite", "compute", "information" etc., only have meaning in specific human contexts— that is, as Searle has emphasized, they are all observer relative or ascribed vs intrinsically intentional. The universe apart from our psychology is neither finite nor infinite and cannot compute nor process anything. Only in our language games do our laptop or the universe compute.

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. Virtually all scientists and most philosophers, do not get that there are two distinct kinds of "questions" or "assertions" (both families of Language Games). 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 (COS)—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, though of course there are borderline cases where we have to decide. 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 a standard way to view reasoning or rationality and is a crucial heuristic in the description of behavior, of which science and math 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 and S) 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 early 2015) the best single source I know. There are endless books and papers on reasoning, decision theory, game theory etc. and many variants of and some alternativesto the two systems framework, but I am one of a rapidly increasing number who find the simple S1/S2 framework the best one for most situations. The best recent book on reason from the dual systems approach is Dual-Process Theories of

the Social Mind (2014) edited by Sherman et al. and Manktelow et al 'The Science of Reason' (2011) is also indispensable.

What is only now coming to the fore, after millennia of discussion of reasoning in philosophy, psychology, logic, math, economics, sociology etc., is the study of the actual way in which we use words like and, but, or, means, signifies, implies, not, and above all 'if' (the conditional being the subject of over 50 papers and a book ('IF') by Evans, one of the leading researchers in this arena. Of course, Wittgenstein understood the basic issues here, likely better than anyone to this day, and laid out the facts beginning most clearly with the Blue and Brown Books starting in the 30's and ending with the superb 'On Certainty' (which can be viewed as a dissertation on how the two systems work), but sadly most students of behavior don't have a clue about his work.

Yanofsky's book (The Outer Limits of Reason) is an extended treatment of these issues, but with little philosophical insight. He says math is free of contradictions, yet as noted, it has been well known for over half a century that logic and math are full of them—just google inconsistency in math or search it on Amazon or see the works of Priest, Berto or the article by Weber in the Internet Encyclopedia of Philosophy. W was the first to predict inconsistency or paraconsistency, and if we follow Berto we can interpret this as W's suggestion to avoid incompleteness. In any event, paraconsistency is now a common feature and a major research program in geometry, set theory, arithmetic, analysis, logic and computer science. Y on p346 says reason must be free of contradictions, but it is clear that "free of" has different uses and they arise frequently in everyday life but we have innate mechanisms to contain them. This is true because it was the case in our everyday life long before math and science. Until very recently only W saw that it was unavoidable that our life and all our symbolic systems are paraconsistent and that we get along just fine as we have mechanisms for encapsulating or avoiding it. W tried to explain this to Turing in his lectures on the foundations of mathematics, given at Cambridge at the same time as Turing's course on the same topic.

Now I will make a few comments on specific items in the book. As noted on p13, Rice's Theorem shows the impossibility of a universal antivirus for computers (and perhaps for living organisms as well) and so is, like Turing's Halting theorem, another alternative statement of Godel's Theorems, but unlike Turing's, it is rarely mentioned.

On p33 the discussion of the relation of compressibility, structure, randomness etc. is much better stated in Chaitin's many other books and papers. Also of fundamental importance is the comment by Weyl on the fact that one can 'prove' or 'derive' anything from anything else if one permits arbitrarily 'complex' 'equations' (with arbitrary 'constants') but there is little awareness of this among scientists or philosophers. As W said we need to look at the role which any statement, equation, logical or mathematical proof plays in our life in order to discern its meaning since there is no limit on what we can write, say or 'prove', but only a tiny subset of these has a use. 'Chaos', 'complexity', 'law', 'structure', 'theorem', 'equation', 'proof', 'result', 'randomness', 'compressibility' etc.are all families of language games with meanings (COS) that vary greatly, and one must look at their precise role in the given context. This is rarely done in any systematic deliberate way, with disastrous results. As Searle notes repeatedly, these words have intrinsic intentionality only relevant to human action and quite different (ascribed) meanings otherwise. It is only ascribed intentionality derived from our psychology when we say that a thermometer 'tells' the temperature or a computer is 'computing' or an equation is a 'proof'.

As is typical in scientific discussion of these topics, the comments on p36 (on omega and quasi-empirical mathematics) and in much of the book cross the line between science and philosophy. Although there is a large literature on the philosophy of mathematics, so far asI know, there is still no better analysis than that of W's, not only in his comments published as 'Remarks on the Foundations of Mathematics' and 'Lectures on the Foundations of Mathematics', but throughout the 20,000 pages of his nachlass (awaiting a new edition on CDROM). Math, like logic, language, art, artefacts and music only have a meaning (use or COS in a context) when connected to life by words or practices.

Likewise, on p54 et seq. it was W who has given us the first and best rationale for paraconsistency, long before anyone actually worked out a paraconsistent logic. Again, it is critical to be aware that not everything is a 'problem', 'question', 'answer', 'proof' or a 'solution' in the same sense and accepting something as one or the other commits one to an often-confused point of view.

In the discussion of physics on p108-9 we must remind ourselves that 'point', 'energy', 'space', 'time', 'infinite', 'beginning', 'end', 'particle', 'wave', 'quantum' etc. are all typical language games that seduce us into incoherent views of how things are by applying meanings (COS) from one game to a quite different one.

So, this book is a flawed diamond with much value and I hope the authors are able to revise and enlarge it. It makes the nearly universal and fatal mistake of regarding science, especially mathematics, logic and physics, as though they were systems—i.e., domains where "number", "space", "time", "proof", "event", "point", "occurs", "force", "formula" etc. can be used throughout its "processes" and "states" without changes in meaning—i.e., without altering the Conditions of Satisfaction, which are publicly observable tests of truth or falsity. And when it's an almost insuperable problem for such truly clever and experienced people as the authors, what chance do the rest of us have? Let us recall W's comment on this fatal mistake.

"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.)" PI p308

While writing this article I came upon Dennett's infamous 'damning with faint praise' summary of W's importance, which he was asked to write when

Time Magazine, with amazing perspicacity, choose Wittgenstein as one of the 100 most important people of the 20th century. As with his other writings, it shows his complete failure to grasp the nature of W's work (i.e., of philosophy) and reminds me of another famous W comment that is pertinent here.

"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

Chaitin is an American and his many books and articles are well known and easy to find, but Da Costa (who is 85) and Doria (75) are Brazilians and most of Da Costa's work is only in Portuguese, but Doria has many items in English. You can find a partial bibliography for Doria here http://www.math.buffalo.edu/mad/PEEPS2/doria_franciscoA.html

The best collections of their work are in Chaos, Computers, Games and Time: A quarter century of joint work with Newton da Costa by F. Doria 132p(2011), On the Foundations of Science by da Costa and Doria 294p(2008), and Metamathematics of science by da Costa and Doria 216p(1997), but they were published in Brazil and almost impossible to find. You will likely have to get them through interlibrary loan or as digital files from the authors.

There is a nice Festschrift in honor of Newton C.A. Da Costa on the occasion of his seventieth birthday edited by Décio Krause, Steven French, Francisco Antonio Doria. (2000) which is an issue of Synthese (Dordrecht). Vol. 125, no. 1-2 (2000), also published as a book, but the book is in only 5 libraries worldwide and not on Amazon.

Another relevant item is New trends in the foundations of science : papers dedicated to the 80th birthday of Patrick Suppes, presented in Florianópolis, Brazil, April 22-23, 2002 by Jean-Yves Beziau; Décio Krause; Otávio Bueno; Newton C da Costa; Francisco Antonio Doria; Patrick Suppes; (2007), which is vol. 154 # 3 of Synthese, but again the book is in only 2 libraries and not on Amazon.

Brazilian studies in philosophy and history of science: an account of recent works by Decio Krause; Antônio Augusto Passos Videira; has one article by each of them and is an expensive book but cheap on Kindle. Though it is a decade old, some may be interested in "Are the Foundations of Computer Science Logic-dependent?" by Carnielli and Doria, which says that Turing Machine Theory (TMT) can be seen as 'arithmetic in disguise', in particular as the theory of Diophantine Equations in which they formalize it, and conclude that 'Axiomatized Computer Science is Logic-Dependent'. Of course, as Wittgensteinians, we want to look very carefully at the language games (or math games), i.e., the precise Conditions of Satisfaction (truthmakers) resulting from using each of these words (i.e., 'axiomatized', 'computer science', and 'logic- dependent'). Carnielli and Agudello also formalize TMT in terms of paraconsistent logic, creating a model for paraconsistent Turing Machines (PTM's) which has similarities to quantum computing and so with a quantic interpretation of it they create a Quantum Turing Machine model with which they solve the Deutsch and Deutsch-Jozsa problems.

This permits contradictory instructions to be simultaneously executed and stored and each tape cell, when and if halting occurs, may have multiple symbols, each of which represents an output, thus permitting control of unicity versus multiplicity conditions, which simulate quantum algorithms, preserving efficiency.

The articles, and especially the group discussion with Chaitin, Fredkin, Wolfram et al at the end of Zenil H. (ed.) 'Randomness through computation' (2011) is a stimulating continuation of many of the topics here, but again

lacking awareness of the philosophical issues, and so often missing the point. Chaitin also contributes to 'Causality, Meaningful Complexity and Embodied Cognition' (2010), replete with articles having the usual mixture of scientific insight and philosophical incoherence, and as usual nobody is aware that Ludwig Wittgenstein (W) provided deep and unsurpassed insights into the issues over half a century ago, including Embodied Cognition (Enactivism).

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Wittgenstein and Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

Finally, I would like to mention the work of physicist/philosopher Nancy Cartwright whose writings on the meaning of natural 'laws' and 'causation' are indispensable to anyone interested in these topics.

Wolpert, Chaitin and Wittgenstein on impossibility, incompleteness, the liar paradox, theism, the limits of computation, a non-quantum mechanical uncertainty principle and the universe as computer—the ultimate theorem in Turing Machine Theory

Michael Starks

ABSTRACT

I have read many recent discussions of the limits of computation and the universe as computer, hoping to find some comments on the amazing work of polymath physicist and decision theorist David Wolpert but have not found a single citation and so I present this very brief summary. Wolpert 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. They make use of Cantor's diagonalization, the liar paradox and worldlines to provide what may be the ultimate theorem in Turing Machine Theory, and seemingly provide insights into impossibility, incompleteness, the limits of computation, and the universe as computer, in all possible universes and all beings or mechanisms, generating, among other things, a non- quantum mechanical uncertainty principle and a proof of monotheism. There are obvious connections to the classic work of Chaitin, Solomonoff, Komolgarov and Wittgenstein and to the notion that no program (and thus no device) can generate a sequence (or device) with greater complexity than it possesses. One might say this body of work implies atheism since there cannot be any entity more complex than the physical universe and from the Wittgensteinian viewpoint, 'more complex' is meaningless (has no conditions of satisfaction, i.e., truth-maker or test). Even a 'God' (i.e., a 'device'with limitless time/space and energy) cannot determine whether a given 'number' is 'random' nor can find a certain way to show that a given 'formula', 'theorem' or 'sentence' or 'device' (all these being complex language games) is part of a particular 'system'.

I have read many recent discussions of the limits of computation and the universe as computer, hoping to find some comments on the amazing work of polymath physicist and decision theorist David Wolpert but have not found a single citation and so I present this very brief abstract. Wolpert 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 areference.

It is most unfortunate that almost nobody is aware of Wolpert, since his work can be seen as 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 Cantors 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 many including John Searle and Rupert Read 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 in his recent comprehensive book 'The Outer Limits of Reason' (see my review). Wolpert says he 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. As noted in my other articles I think that definitive comments on many relevant issues here (completeness, certainty, the nature of computation etc.) were made long ago by Ludwig Wittgenstein and here is one relevant comment of Juliet Floyd on Wittgenstein:"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 insofaras 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. 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..." The parallels to Wolpert are obvious.

However once again note that "infinite", "compute", "information" etc., only have meaning (i.e., are transitive (Wittgenstein) or have COS--Conditions of Satisfaction (Searle) in specific human contexts—that is, as Searle has emphasized, they are all observer relative or ascribed vs intrinsically intentional. The universe apart from our psychology is neither finite nor infinite and cannot compute nor process anything. Only in our language games do our laptop or the universe compute.

However not everyone is oblivious to Wolpert. Well known econometricians Koppl and Rosser 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. Since Godel's 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) 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 Language Games in Wittgenstein's terms) 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, and 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.

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. And this seemingly abstruse work of Wolpert's may have implications for all rationality. Of course, one must keep in mind that (as Wittgenstein noted) math and logic are all syntax and no semantics and they have nothing to tell us until connected to our life by language (i.e., by psychology) and so it is easy to do this in ways that are useful (meaningful or having COS) or not (no clear COS).

Finally, one might say that many of Wolpert's comments are restatements of the idea that no program (and thus no device) can generate a sequence (or device) with greater complexity than it possesses. There are obvious connections to the classic work of Chaitin, Solomonoff, Komolgarov and Wittgenstein and to the notion that no program (and thus no device) can generate a sequence (or device) with greater complexity than it possesses. One might say this body of work implies atheism since there cannot be any entity more complex than the physical universe and from the Wittgensteinian viewpoint, 'more complex' is meaningless (has no conditions of satisfaction, i.e., truth-maker or test). Even a 'God' (i.e., a 'device' with limitless time/space and energy) cannot determine whether a given 'number' is 'random' nor can find a certain way to show that a given 'formula', 'theorem' or 'sentence' or 'device' (all these being complex language games) is part of a particular 'system'.

Review of 'The Outer Limits of Reason' by Noson Yanofsky 403p (2013)

Michael Starks

ABSTRACT

I give a detailed review of 'The Outer Limits of Reason' by Noson Yanofsky from a unified perspective of Wittgenstein and evolutionary psychology. I indicate that the difficulty with such issues as paradox in language and math, incompleteness, undecidability, computability, the brain and the universe as computers etc., all arise from the failure to look carefully at our use of language in the appropriate context and hence the failure to separate issues of scientific fact from issues of how language works. I discuss Wittgenstein's views on incompleteness, paraconsistency and undecidability and the work of Wolpert on the limits to computation. To sum it up: The Universe According to Brooklyn---Good Science, Not So Good Philosophy.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

Alvy's Mom responding to his being depressed because the universe is expanding — "What has the universe got to do with it? You're here in Brooklyn! Brooklyn is not expanding!"

This famous Woody Allen joke makes a profound point about the context sensitivity of language that applies throughout philosophy and science. It's funny because it is obvious that the meaning of "expanding" in the two cases is quite different. Brooklyn might expand if the population increases or the city annexes outlying land, but the universe is said to expand due to cosmic telescopes that show a red shift indicating that stars are receding from each

other or to measurements of matter density etc. Different meanings (language games) (LG's) were famously characterized by the Austrian-English philosopher Ludwig Wittgenstein (W) as the central problem of philosophy and shown to be a universal default of our psychology. Though he did this beginning with the Blue and Brown Books (BBB) in the early 30's, left a 20,000 page nachlass, and is the most widely discussed philosopher of modern times, few understand him.

To Yanofsky's (Y's) credit, he has given much attention to philosophy and even quotes W a few times but without any real grasp of the issues. It is the norm among scientists and philosophers to mix the scientific questions of fact with the philosophical questions of how language is being used and, as W noted, — 'Problem and answer pass one another by'. Yanofsky (a Brooklyn resident like many of his friends and teachers) has read widely and does a good job of surveying the bleeding edges of physics, mathematics and computer science in a clear and authoritative manner, but when we come to the limits of scientific explanation and it's not clear what to say, we turn to philosophy.

Philosophy can be seen as the descriptive psychology of higher order thought or as the study of the contextual variations of language used to describe cognition or intentionality (my characterizations), or the study of the logical structure of rationality(LSR)(Searle). Regarding LSR, Berkeley philosopher John Searle (S) is one of the best since W and his work can be seen as an extension of W. I have reviewed many books by them and others and together these reviews constitute a skeletal outline of higher order thought or intentionality, and so of the foundations of science.

It is common for books to betray their limitations in their titles and that is the case here. "Reason" and "limits" are complexes of language games. So I should stop here and spend the whole review showing how Y's title reveals the deep misunderstanding of what the real issues are. I knew we were in for a rough time by p5 where we are told that our normal conceptions of time, space etc., are mistaken and this was known even to the Greeks. This brings

to mind W: “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… at something which no explanation seems capable of clearing up…And what’s more, this satisfies a longing for the transcendent, because in so far as people think they can see the ‘limits of human understanding’, they believe of course that they can see beyond these. - CV (1931)” and also "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…” So, I would say we just have to analyze the different types of language games. Looking deeper is essential but surrendering our prior use is incoherent.

Think about what is implied by “The Outer Limits of Reason”. “Outer”, “Limits” and “Reason” all have common uses, but they are frequently used by Y in different ways, and they will seem “quite innocent”, but this can only be discussed in some specific context.

We are using the word “question” (or “assertion”, “statement” etc.) with utterly different senses if we ask “Does 777 occur in the decimal expansion of Pi?” than if we ask “Does 777 occur in the first 1000 digits of the decimal expansion of Pi? (W)” In the latter case it’s clear what counts as a true or false answer but in the former it has only the form of a question. On p10 we find a group of “statements” which have quite different meanings. The first three are definitions and one could understand them without knowing any facts about their use—e.g., X cannot be Y and not Y.

Y recommends the documentary “Into the Infinite” but actually it cannot be viewed unless you are in the UK. I found it free on the net shortly after it came out and was greatly disappointed. Among other things it suggests Godel and Cantor went mad due to working on problems of infinity—for which there is not a shred of evidence— and it spends much time with Chaitin, who, though a superb mathematician, has only a hazy notion about the various philosophical issues discussed here. If you want a lovely whirlwind “deep science” documentary I suggest “Are We Real?” on Youtube, though it makes some of the same mistakes.

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 and S) 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 mid-2016) the best single source I know.

Regarding "incompleteness" or "randomness" in math, Y's failure to mention the work of Gregory Chaitin is truly amazing, as he must know of his work, and Chaitin's proof of the algorithmic randomness of math (of whichGodel's

results are a corollary) and the Omega number are some of the most famous mathematical results in the last 50 years.

Likewise, one sees nothing about unconventional computing such as those with membranes, DNA etc., that have no logic gates and follow the biological patterns of "information processing". The best way to get free articles on the cutting edge is to visit ArXiv.org, viXra.org, academia.edu, citeseerx.ist.psu.edu, researchgate.net, or philpapers.org where there are tens of thousands of free preprints on every topic here (be warned this may use up all your spare time for the rest of your life!).

Regarding Godel and "incompleteness", since our psychology as expressed in symbolic systems such as math and language is "random" or "incomplete" and full of tasks or situations ("problems") that have been proven impossible (i.e., they have no solution-see below) or whose nature is unclear, it seems unavoidable that everything derived from it—e.g. physics and math) will be "incomplete" also. Afaik the first of these in what is now called Social Choice Theory or Decision Theory (which are continuous with the study of logic and reasoning and philosophy) was the famous theorem of Kenneth Arrow 63 years ago, and there have been many since. Y notes a recent impossibility or incompleteness proof in two-person game theory. In these cases, a proof shows that what looks like a simple choice stated in plain English has no solution.

Although one cannot write a book about everything, I would have liked Y to at least mention such famous "paradoxes" as Sleeping Beauty (dissolved by Read), Newcomb's problem (dissolved by Wolpert) and Doomsday, where what seems to be a very simple problem either has no one clear answer, or it proves exceptionally hard to find one. A mountain of literature exists on Godel's two "incompleteness" theorems and Chaitin's more recent work, but I think that W's writings in the 30's and 40's are definitive. Although Shanker, Mancosu, Floyd, Marion, Rodych, Gefwert, Wright and others have done insightful work, it is only recently that W's uniquely penetrating analysis of the language games being played in mathematics have been clarified by Floyd (e.g., 'Wittgenstein's Diagonal Argument-a Variation on Cantor and

Turing'), Berto (e.g., 'Godel's Paradox and Wittgenstein's Reasons , and 'Wittgenstein on Incompleteness makes Paraconsistent Sense' and the book 'There's Something about Godel ', and Rodych (e.g., Wittgenstein and Godel: the Newly Published Remarks', 'Misunderstanding Gödel :New Arguments about Wittgenstein', 'New Remarks by Wittgenstein' and his article in the online Stanford Encyclopedia of Philosophy 'Wittgenstein's Philosophy of Mathematics'). Berto is one of the best recent philosophers, and those with time might wish to consult his many other articles and books including the volume he co-edited on paraconsistency (2013). Rodych's work is indispensable, but only two of a dozen or so papers are free online with the usual search but of course it's all free online if one knows where to look.

Berto notes that W also 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) 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: there 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 arithmatics harmonizes with an opinion Wittgenstein maintained thoughout 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 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 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).

As Rodych, Berto and Priest (another pioneer in paraconsistency) have noted, W was the first (by several decades) to insist on the unavoidability and utility of inconsistency (and debated this issue with Turing during his classes on the Foundations of Mathematics). We now see that the disparaging comments about W's remarks on math made by Godel, Kreisel, Dummett and many others were misconceived. As usual, it is a very bad idea to bet against W. Some may feel we have strayed off the path here—after all in "The Limits of Reason" we only want to understand science and math and why these paradoxes and inconsistencies arise and how to dispose of them. But I claim that is exactly what I have done by pointing to the work of W and his intellectual heirs. Our symbolic systems (language, math, logic, computation) have a clear use in the narrow confines of everyday life, of what we can loosely call the mesoscopic realm-- the space and time of normal events we can observe unaided and with certainty (the innate axiomatic bedrock or background). But we leave coherence behind when we enter the realms of particle physics or the cosmos, relativity, math beyond simple addition and subtraction with whole numbers, and language used out of the immediate context of everyday events. The words or whole sentences may be the same, but the meaning is lost. It looks to me like the best way to understand philosophy is enter it via Berto, Rodych and Floyd's work on W, so as to understand the subtleties of language as it is used in math and thereafter "metaphysical" issues of all kinds may be dissolved. As Floyd notes "In a sense, Wittgenstein is literalizing Turing's model, bringing it back down to

the everyday and drawing out the anthropomorphic command-aspect of Turing's metaphors."

W pointed out how in math, we are caught in more LG's (Language Games) where it is not clear what "true", "complete", "follows from", "provable", "number", "infinite", etc. mean (i.e., what are their COS or truthmakers in THIS context), and hence what significance to attach to 'incompleteness' and likewise for Chaitin's "algorithmic randomness". As W noted frequently, do the "inconsistencies" of math or the counterintuitive results of metaphysics cause any real problems in math, physics or life? The apparently more serious cases of contradictory statements –e.g., in set theory---have long been known but math goes on anyway. Likewise for the countless liar (self-referencing) paradoxes in language which Y discusses, but he does not really understand their basis, and fails to make clear that self-referencing is involved in the "incompleteness" and "inconsistency" (groups of complex LG's) of mathematics as well.

Another interesting work is "Godel's Way" (2012) by Chaitin, Da Costa and Doria (see my review). In spite of its many failings—really a series of notes rather than a finished book—it is a unique source of the work of these three famous scholars who have been working at the bleeding edges of physics, math and philosophy for over half a century. Da Costa and Doria are cited by Wolpert (see below) since they wrote on universal computation and among his many accomplishments, Da Costa is a pioneer on paraconsistency. Chaitin also contributes to 'Causality, Meaningful Complexity and Embodied Cognition' (2010), replete with articles having the usual mixture of insight and incoherence and as usual, nobody is aware that W can be regarded as the originator of the position current as Embodied Cognition or Enactivism. Many will find the articles and especially the group discussion with Chaitin, Fredkin, Wolfram et al at the end of Zenil H. (ed.) 'Randomness through computation' (2011) a stimulating continuation of many of the topics here, but lacking awareness of the philosophical issues and so mixing science (fact finding) with philosophy (language games).

It is a constant struggle to keep in mind that different contexts mean different LG's (meanings, COS) for "time", "space", "particle" "object", "inside", "outside", "next", "simultaneous", "occur", "happen", "event","question", "answer" ,"infinite", "past", "future", "problem", "logic", "ontology", "epistemology", "solution", "paradox", "prove", "strange", "normal", "experiment", "complete", "uncountable", "decidable", "dimension", "complete", "formula", "process", "algorithm", "axiom", "mathematics", "physics", "cause", "place", "same","moving", "limit", "reason", "still", "real" "assumption", "belief", 'know", "event", "recursive", "meta—", "self-referential" "continue", "particle", "wave",, "sentence" and even (in some contexts) "and", "or", "also", "add" , "divide", "if…then", "follows" etc.

To paraphrase W, most of what people (including many philosophers and most scientists) have to say when philosophizing is not philosophy but its raw material. Yanofsky joins Hume, Quine, Dummett, Kripke, Dennett, Churchland, Carruthers, Wheeler etc. in repeating the mistakes of the Greeks with elegant philosophical jargon mixed with science. As antidotes, I suggest some my reviews and some Rupert Read such as his books 'A Wittgensteinian Way with Paradoxes' and 'Wittgenstein Among the Sciences', or go to academia.edu and get his articles , especially 'Kripke's Conjuring Trick' and 'Against Time Slices' and then as much of S as feasible, but at least his most recent such as 'Philosophy in a New Century', 'Searle's Philosophy and Chinese Philosophy', 'Making the Social World' and 'Thinking About the Real World' (or my reviews if time is short) and his forthcoming volume on perception. There are also over 100 youtubes of Searle which confirm his reputation as the best standup philosopher since Wittgenstein.

Y 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' (i.e., not so if we clarify the language games) 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 Wolpert) it is the most far reaching (or just trivial/incoherent) but there have been an avalanche of others. As noted, 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.

Y 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. "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 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 Y'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 of Y's and so Y 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).

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 Cantors 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 Y. 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..."

W's prescient grasp of these issues including his embrace of strict finitism and paraconsistency is finally spreading through math, logic and computer science (though rarely with any acknowledgement). Bremer has recently suggested the necessity of a Paraconsistent Lowenheim-Skolem Theorem. "Any mathematical theory presented in first order logic has a finite paraconsistent model." Berto continues: "Of course strict finitism and the insistence on the decidability of any meaningful mathematical question go hand in hand. As Rodych has remarked, the intermediate Wittgenstein's view is dominated by his 'finitism and his view […] of mathematical meaningfulness as algorithmic decidability' according to which '[only] finite logical sums and products (containing only decidable arithmetic predicates) are meaningful because they are algorithmically decidable.'" In modern terms this means they have public conditions of satisfaction-i.e., can be stated as a proposition that is true or false. And this brings us to W's view that ultimately everything in math and logic rests on our innate (though of course extensible) ability to recognize a valid proof. Berto again: "Wittgenstein believed that the naïve (i.e., the working mathematicians) notion of proof had to be decidable, for lack of decidability meant to him simply lack of mathematical meaning: Wittgenstein believed that everything had to be decidable in mathematics…Of course one can speak against the decidability of the naïve notion of truth on the basis of Godel's results themselves. But one may argue that, in the context, this would beg the question against paraconsistentists-- and against Wittgenstein too. Both Wittgenstein and the paraconsistentists on one side, and the followers of the standard view on the other, agree on the following thesis: the decidability of the notion of proof and its inconsistency are incompatible. But to infer from this that the naïve notion of proof is not decidable invokes the indispensability of consistency, which is exactly what Wittgenstein and the paraconsistent argument call into

question...for as Victor Rodych has forcefully argued, the consistency of the relevant system is precisely what is called into question by Wittgenstein's reasoning." And so: "Therefore the Inconsistent arithmetic avoids Godel's First Incompleteness Theorem. It also avoids the Second Theorem in the sense that its non-triviality can be established within the theory: and Tarski's Theorem too—including its own predicate is not a problem for an inconsistent theory "[As Priest noted over 20 years ago]. Prof. Rodych thinks my comments reasonably represent his views, but notes that the issues are quite complex and there are many differences between he, Berto and Floyd.

And again, 'decidability' comes down to the ability to recognize a valid proof, which rests on our innate axiomatic psychology, which math and logic have in common with language. And this is not just a remote historical issue but is totally current. I have read much of Chaitin and never seen a hint that he has considered these matters. The work of Douglas Hofstadter also comes to mind. His Godel, Escher, Bach won a Pulitzer prize and a National Book Award for Science, sold millions of copies and continues to get good reviews (e.g. almost 400 mostly 5 star reviews on Amazon to date) but he has no clue about the real issues and repeats the classical philosophical mistakes on nearly every page. His subsequent philosophical writings have not improved (he has chosen Dennett as his muse), but, as these views are vacuous and unconnected to real life, he continues to do excellent science.

However once again note that "infinite", "compute", "information" etc., only have meaning in specific human contexts—that is, as Searle has emphasized, they are all observer relative or ascribed vs intrinsically intentional. The universe apart from our psychology is neither finite nor infinite and cannot compute nor process anything. Only in our language games do our laptop or the universe compute.

However not everyone is oblivious to Wolpert. Well known econometricians Koppl and Rosser 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. Since Godel's 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) 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, and 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.

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.
On p19 Yanofsky says math is free of contradictions, yet as noted, it has been well known for over half a century that logic and math are full of them—just google inconsistency in math or search it on Amazon or see the works of

Priest, Berto or the article by Weber in the Internet Encyclopedia of Philosophy. W was the first to predict inconsistency or paraconsistency, and if we follow Berto we can interpret this as W's suggestion to avoid incompleteness. In any event, paraconsistency is now a common feature and a major research program in geometry, set theory, arithmetic, analysis, logic and computer science. Y returns to this issue other places such as on p346 where he says reason must be free of contradictions, but it is clear that "free of" has different uses and they arise frequently in everyday life but we have innate mechanisms to contain them. This is true because it was the case in our everyday life long before math and science

Regarding time travel (p49), I suggest Rupert Read's "Against Time Slices" in his free online papers or "Time Travel-the very idea" in his book "A Wittgensteinian Way with Paradoxes."

Regarding the discussion of famous philosopher of science Thomas Kuhn on p248, those interested can see the work of Rupert Read and his colleagues, most recently in his book "Wittgenstein Among the Sciences" and while there, you may make a start at eliminating the hard problem of consciousness by reading "Dissolving the hard problem of consciousness back into ordinary life" (or his earlier essay on this which is free on the net).

It is in the last chapter "Beyond Reason" that philosophical failings are most acute as we return to the mistakes suggested by my comments on the title. 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. E.G, the "self-referential" paradoxes on p344 arise because the context and so the COS are unclear.

On p140 we might note that 1936 was not actually "long" before computers since Zeus in Germany and Berry and Atanasoff in Iowa both made primitive machines in the 30's, though these pioneers are quite unknown to many in the field. Some of Zeus's are in the Deutsches Museum in Munich while the B & A machine was reconstructed from his design recently at Iowa State University where they worked.

Wittgenstein discussed the philosophical aspects of computers some years before they existed.

On p347, what we discovered about irrational numbers that gave them a meaning is that they can be given a use or clear COS in certain contexts and at the bottom of the page our "intuitions" about objects, places, times, length are not mistaken- rather we began using these words in new contexts where the COS of sentences in which they are used were utterly different. This may seem a small point to some but I suggest it is the whole point. Some "particle" which can "be in two places" at once is just not an object and/or is not "being in places" in the same sense as a soccer ball.

Regarding his reference on p366 to the famous experiments of Libet, which have been taken to show that acts occur before our awareness of them and hence negate will, this has been carefully debunked by many including Searle and Kihlstrom.

It is noteworthy that on the last page of the book he comments on the fact that many of the basic words he uses do not have clear definitions but does not say that this is because it requires much of our innate psychology to provide meaning, and here again is the fundamental mistake of philosophy. "Limit" or "exist" has many uses but the important point is-- what is its use in this

context. “Limit of reason” or “the world exists” do not (without further context) have a clear meaning (COS) but “speed limit on US 15” and “a life insurance policy exists for him” are perfectly clear.

Regarding solipsism on p369, this and other classical philosophical ‘positions’ were shown by W to be incoherent.

And finally, why exactly is it that quantum entanglement is more paradoxical than making a brain out of proteins and other goop and having it feel and see and remember and predict the future?

Is it not just that the former is new and not directly present to our senses (i.e., we need subtle instruments to detect it) while animal nervous systems have been evolved to do the latter hundreds of millions of years ago and we find it natural since birth? I don’t see the hard problem of consciousness to be a problem at all, or if one insists then ok but it’s on all fours with endless others –why there is (or what exactly is) space, time, red, apples, pain, the universe, causes, effects, or anything at all.

Overall an excellent book provided it is read with this review in mind.

Review of The Inflationary Universe by Alan Guth 358 p (1997)

Michael Starks

ABSTRACT

This is one of the best popular cosmology books ever written and Guth is now (2016) a top physics Professor at MIT. He tells the extremely complex story of inflation and related areas of particle physics in such an absorbing style that it reads like a detective novel-in fact, it is a detective novel-how he and others found out how the universe started! The interweaving of his personal story and that of many colleagues along with their photos and many wonderfully clear diagrams allows just the right amount of relaxation from the intensity of the physics. In places the style reminds one of Watson´s famous book ``The Double Helix``. He tells how his work on magnetic monopoles and spontaneous symmetry breaking led to the discovery of the inflationary theory of the very early universe (ca. 10 to minus 35 seconds!).

Along the way you will learn many gems that should stay with you a long time such as: the observed universe(e.g., everything the Hubble telescope etc. can see out to ca. 15 billion light years when the universe began) is likely just a vanishingly tiny part of the entire inhomogeneous universe which is about 10 to the 23rd times larger; the big bang probably took place simultaneously and homogeneously in our observed universe; there probably have been and will continue to be an infinite number of big bangs in an infinite number of universes for an infinite time; when a bang happens, everything(space, time, all the elements) from the previous universe are destroyed; the stretching of space can happen at speeds much greater than the speed of light; our entire observed universe lies in a single bubble out of an endless number so there may be trillions of trillions just in our own entire(pocket) universe(and there may be an endless number of such); none of these infinite number of universes interact-i.e., we can never find out anything about the others; each universe started with its own big bang and will eventually collapse to create a new big

bang; all this implies that the whole universe is fractal in nature and thus infinitely regresses to ever more universes(which can lead one to thinking of it as a giant hologram); disagreements between the endless(hundreds at least) variations of inflation are sometimes due to lack of awareness that different definitions of time are being used; some theories suggest that there was a first big bang but we can never find out what happened before it; nevertheless it appears increasingly plausible that there was no beginning but rather an eternal cycle of the destruction and creation, each being the beginning of spacetime for that universe; to start a universe you need about 25g of matter in a 10 to minus 26cm diameter sphere with a false vacuum and a singularity(white hole).

He deliberately spends little time on the endless variants of inflation such as chaotic, expanded and supernatural inflation or on dark matter′, supersymmetry and string theory, though they were well known at the time as you can find by reading other books such as Michio Kaku′s `Hyperspace` (see my review) and countless others. Of course, much has happened since this book appeared but it still serves as an excellent background volume so cheap now it's free for the cost of mailing.

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Regardless of all this we still want to know how and why it all started even if this question seems to make no sense and he notes that Tryon speculated long ago that quantum fluctuations could give rise to our universe instantly any time from the very beginning (e.g., 10 to minus 35 seconds) to this instant, complete with our particle accelerators and Guth with his ``memories`` of inventing inflation! The probability is incredibly small, but as there may be an infinite amount of time and space even the improbable becomes certain! Of course, those familiar with my writing will recognize the we are dealing

with a group of ill defined (unclear conditions of satisfaction) language games here and as we clarify them the mysteries will disappear. The physicist Vilenkin extended Tryon´s idea in a mathematically well-defined way, giving a quantum description of general relativity that shows that the universe (spacetime) can arise from nothing. It seems this is based on the fact that one of the possible geometries of the universe is an empty one with no points in which quantum tunnels to a nonempty state which then inflates. Inflation requires only a false vacuum and some mechanism to produce baryons and is independent of and GUTs. Even Einstein´s infamous cosmic constant has reappeared as the energy density in the vacuum--which is a very complex state in which particles and antiparticles are appearing (from the vacuum!), annihilating one another, and disappearing at an enormous rate. When you get to the most advanced (basic) theory, it is utter chaos, with only thin threads of observation from accelerators and astronomical instruments linking it the universe.

Hawking came up with perhaps the most outrageous theories of the beginning--a set of equations in which (at 10 to minus 43 sec) the concepts of space and time dissolve into quantum ambiguity. The universe just is and can inflate from there: i.e., the famous Hartle- Hawking quantum wave function where spacetime has no initial boundary with quantum fluctuations(randomness) determining the probability of every possible outcome (all possible universes). This implies that the universe must be, because nothingness is impossible, but then why are there laws of physics?

Strings are an alternative to quantum fluctuations but they are even harder to connect to reality. It is their mathematical elegance (so elegant that we have to develop more complex math before it can evolve further!) and power (24 dimensional geometry!) that makes them irresistible. One gets the impression that String Theory could explain any possible universe and indeed, that is one of the major problems--the equations have millions of solutions and which one is for our universe!? (if you want to know about this see my review of Kaku's ' Hyperspace').
Guth gets into a very interesting discussion of what ´nothing´ and ´beginning´ mean but he has no idea about Wittgenstein and language games. In fact, the

last chapter (Epilogue) is the most speculative and for many probably the most interesting part of the book and is (like much of modern physics for most people) almost indistinguishable from science fiction--incredible special effects, but it lacks a plot, character development, a beginning and an end!

Nobody knew in 1997 that the universe was expanding at an increasing rate but due to the endless variations on the theory and the high degree of arbitrariness and virtually limitless nature of possible assumptions, I doubt it will consitute a problem for very long. Likewise with the various theories about how space itself is expanding, not just the matter in it.

Cosmology and particle physics are intimately connected and since we have probably reached the limit in cost for accelerators (the world´s entire GDP would not be near enough to build one that could get remotely near the 10 to the 19th BEV required to examine events at the Planck length) the next few years may see the end of input to cosmology from the bottom end. The top end--mostly outer space instruments- are less costly and will likely yield new info for a few decades yet -but the coming collapse of civilization will likely put an end to them as well by mid-century. So, it seems we may have another 50 years to evolve our GUTs (Grand Unified Theories) and our cosmology and `know the mind of God`(Hawking).

He does not spend alot of time in philosophical digressions but I think most would agree that our psychology (e.g., the cognitive templates or inference engines) severely limits the kinds of theories we can produce. Perhaps one day computers will generate many (an infinite number?) of advanced theories but we probably will not be able to understand most of them. One needs a certain level of brain power to understand something and ours was evolved about a million years ago to get food, find mates and manipulate other monkeys. Just as a truck needs a certain horsepower to haul a load up a hill, a brain must have a certain calculating ability to understand an idea or an algorithm and it seems probable to me that our computers will soon produce many beyond our reach.
It occurs to me that if the universe is a giant computer (as many have theorized—e,g., Wolfram most recently in ``A New Kind of Science``) then

we hope that it uses some kind of algorithm that we can understand -and prove with our math. But if so, maybe only our computers will be able to understand it or communicate with it! Also since the 'incompleteness' theorems of Godel and Chaitin show that there are an infinite number of well-formed algorithms that we cannot, even in principle ever prove or disprove (and no computer can do it either), it occurs to me that it is possible that the algorithms of the universal computer may be among those, and in that case even our most advanced computers may never prove all the algorithms of the universal computer— i.e., the universe) and so it will forever remain as physics is now, with some laws that cannot be connected to the others and some the truth of which will be always undecidable.

Perhaps Chaitin´s omega number (giving the limits of math) may someday tell us something about the ability of computers (our most advanced future one vs the universe) to prove each other's algorithms. Perhaps it is consistent with one of the endless versions of inflation that each universe has a different algorithm or that the algorithms change with time (and they have already used such ideas as gravity changing with time). However, the notions of incompleteness, limits to computation, undecidability are complex language games which I have commented on extensively in my other reviews and articles so I will not repeat it here.

He deliberately spends little time on the endless variants of inflation such as chaotic, expanded and supernatural inflation or on dark matter´, supersymmetry and string theory, though they were well known at the time as you can find by reading other books such as Michio Kaku´s `Hyperspace` published in 1994 (see my review). Of course, much has happened since this book appeared but it still serves as an excellent background volume so cheap now it's almost free.

Review of Hyperspace by Michio Kaku 359p (1994)

Michael Starks

ABSTRACT

"There is something fascinating about science. One gets such wholesale returns of conjecture out of such a trifling investment of fact" Mark Twain-Life on the Mississippi

This is a lovely book full of fascinating info on the evolution of physics and cosmology. Its main theme is how the idea of higher dimensional geometry created by Riemann, recently extended to 24 dimensions by string theory, has revolutionized our understanding of the universe. Everyone knows that Riemann created multidimensional geometry in 1854 but it is amazing to learn that he also was a physicist who believed that it held the key to explaining the fundamental laws of physics. Maxwell´s equations did not exist then and Riemann´s untimely death at age 39 prevented his pursuit of these ideas. Both he and his British translator Clifford believed that magnetic and electric fields resulted from the bending of space in the 4th dimension-more than 50 years before Einstein! The fourth dimension became a standard subject in the popular media for the next 50 years with several stories by HG Wells using it and even Lenin wrote about it. The American mathematician Hinton had widely publicized his idea that light is a vibration in the 4th spatial dimension.

Amazingly, physicists and most mathematicians forgot about it and when Einstein was looking for the math needed to encompass general relativity 60 years later, he had never heard of Riemannian geometry. He spent 3 years trying to find the equations for general relativity and only after a math friend told him about Riemann was he able to complete his work. Riemann´s equations with four dimensional metric tensors describing every point in space were incorporated almost unchanged into relativity. And on and on it goes. Since this review, I have written a great deal on the language games of

math and science, uncertainty, incompleteness, the limits of computation etc., so those interested should find them useful since this volume, like most science, frequently wanders across the line into philosophy (scientism).

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String theory can be said to date from 1919 when an obscure mathematician named Kaluza added the ten components of Einstein`s gravitational field

with the 4 components of Maxwell´s electromagnetic fields and time to get the 15 components of a 5 dimensional field. He even produced the idea that the 5th spatial dimension is a sphere smaller than an atom (i.e., too small to be measured) -- which remains a fundamental idea in string theory´s 10 dimensions. In 1936 the mathematician Oscar Klein postulated that the 5th dimension has the Planck length (10 to minus 33cm) which is indeed far too small to measure by any forseeable means (it requires an accelerator of 10 to the 19th BEV) and this, with the arrival in 1925 of quantum theory and the uncertainty principle pushed the geometry based Kaluza-Klein and, to some extent, even relativity theory into the background for nearly 60 years.

In quantum theory, the different forces are created by the exchange of different quanta and no geometry is used. This led to the Yang-Mills field, QED, QCD and the Standard Model of particle physics which is: all matter is quarks and leptons which interact by the exchange of different types of quanta as described by the Maxwell and Yang-Mills equations. Veneziano and Suzuki discovered the basis for string theory in 1968 when they used Euler´s beta functions to describe the strong interactions of subatomic particles. In 1970 two Japanese scientists used the idea of vibrating strings to expand on it. It is now halfway through the book and Kaku describes how he invented the first field theory of strings. Then it was shown that string theory is self-consistent only in 10 and 26 dimensions and research nearly stopped for 10 years.

Then in 1984 Green and Schwarz showed that super string theory was the only self-consistent theory of quantum gravity. Edward Witten became interested in the higher dimension geometric equations in physics in 1982 when he realized that gravity was impossible in quantum field theory but inevitable in the 5th dimension. In 1985, he used the highl- advanced math of cohomology theory to derive a field theory of strings. This led eventually to the use of some of the most advanced (and previously unrelated) fields of math known to describe the 26 dimensional space of counterclockwise vibrations of heterotic string theory, and in some sense, the explanation of everything. Then things stalled again because millions of potential solutions

to the equations are known, but which one describes only our universe; i.e., which one gives the correct field theory of strings (FTS) defined in our 4 dimensions? Nobody knows how to solve the equation using nonperturbative methods and it is often stated that we need more advanced math, i,e., math that does not yet exist. Almost everything known in particle physics has used perturbative methods.

One of the major problems is that nobody knows why string theory works—i.e., what is the underlying geometric or physical principle that makes it relevant and allows all of physics to be incorporated into the 10 (when condensed) dimensions of string theory? It is the only quantum theory that requires a fixed number of dimensions. Another bizarre result is that it has to use the modular functions invented some 60 years before by the self-taught Indian math prodigy Ramanujan, who as a teenager reinvented much of modern math in his head. One of his bizarre modular functions contains a term raised to the 24th power and this is exactly the number of vibrational modes needed (24 plus 2 for spacetime or generalized in the FTS it´s 8 plus 2 or 10). The symmetries of the subatomic realm (i.e., particles) become the result of the curling up of the higher dimensional spaces.

Meanwhile, the standard model of physics was evolving but it has even more arbitrary assumptions than the inflationary theory of the big bang (Kaku says little about inflation but see my review of Guth´s book The Inflationary Universe). So, GUTs (Grand Unified Theories) appeared and faded to be supplanted by supersymmetry (based on bizarre supernumbers) which integrated fermions and bosons with their spins. This led (1976) to the lovely gauge theory of supergravity in which all particles have superpartners (sparticles).

Using an 11 dimensional version of the Klein-Kaluza theory to describe the 11 dimensional supergravity field allows the incorporation of matter (i.e., quarks and leptons). But sparticles were never found and supergravity turned out to be non-renormalizable (i.e., it led to infinities) so SG died.

Then came hypersurfaces described by complex numbers, on which the wave functions of the particles vibrate, thus acquiring the symmetries of the hyperspheres. So if you then apply the Kaluza-Klein theory for 4 plus N dimensions and split up its metric tensor , you get everything--the Einstein equations for gravity, the Yang-Mills equations for strong and weak forces, and the Maxwell equations for the electromagnetic fields. Amazingly, it turns out that not only had Klein described the Yang-Mills field in 1938 (25 years before Yang and Mills--and they got the Nobel Prize for it!) but Y-M is now based on quantum theory which had killed interest in Kaluza-Klein for almost 60 years!!!

This brings us back to Edward Witten (whom some regard as the successor to Einstein) and superstring theory, in which matter is now the harmony of extremely small vibrating strings which can fuse and break up. It accounts for almost everything and is the first quantum theory of gravity with finite quantum corrections. In spite of its highly abstract nature, lack of any experimentally verifiable predictions, lack of a unique solution for our universe- it has millions of solutions (orbifolds), many(all?) of which could have properties that might make our universe impossible- and any rational explanation for why it works (i.e. no conceptual framework uniting gravity and quantum theory), it has a compelling, almost religious appeal for many physicists because, starting only from geometry and the condition that strings move self consistently in spacetime we get magnetism, electricity, spacetime, general relativity, Klein-Kaluza, supergravity, the standard model and the Grand Unified Theory--it binds matter,energy and spacetime. String theory does not however, predict or explain the properties of particles nor the paradoxes of quantum mechanics, uncertainty and entanglement (Bell´s theorem).

Though I don´t think Kaku says this anywhere, it is so general and so powerful that one gets the feeling that it could explain anything in any possible universe and in that case, it does not really explain anything at all--it becomes the mathematical equivalent of `God made it that way`. So, it may eventually begin to lose its appeal as a final explanation (as it has for many physicists).

So, we still can ask the same question as Kaluza in 1919--where is the 5th dimension? -- and still pursue the same answer given by Klein in 1926.

Quantum theory and quantum tunneling explainthe apparent violation of the conservation of energy shown by radioactive decay. It might explain the sudden appearance of a 4 and a 6 D universe from a 10D one.

Because the false vacuum of a 10D universe was unstable we assume, but cannot prove, that it quantum tunneled to a lower energy state, breaking symmetry and creating a true vacuum in 4D space. But if it is not the true vacuum then one day a small bubble may appear and enlarge at the speed of light until it destroys our universe. Our 4D universe can curl up in 4 ways but a 10D one can curl up in millions of ways. So, to find the right one, we need to solve the field theory of strings using the theory of phase transitions--the most difficult problem in quantum theory.

In 1994, the heterotic string theory of David Gross (one of the four Princeton physicists known as the Princeton string quartet) showed that the quantum unit of gravity emerges as the smallest vibration of a closed string.

Since the laws of physics break down at the very small distances and large energies of the big bang, we need a string theory with 10 dimensions that breaks into 6 plus 4 to create twin universes of which the 6 is an orbifold too small to observe. Kaku says that only 10D superstring theory can explain what happens before the big bang but of course Valenkin and Hawking and others have alternatives. (see my review of Guth).

Even in the string theory of the big bang, a small piece of the universe must inflate by a factor of 10 to the 50th, so apparently, all of inflation is included. It has been frequently theorized that black holes may be tunnels in spacetime to other universes. But it appears we don´t know if black holes really pinch off hyperspheres of spacetime in which light is trapped.

Along with its untestability and lack of any conceptual foundation, a further problem is that the math is so general that it has millions of solutions(orbifolds) which include all of physics (General relativity, Grand Unified Theories etc,) and there is no way to decide which one of them describes our universe. Some (or all?) of the solutions have properties that might make life, or even our universe, impossible. One cannot simply put a computer to work to decide which solution is right for our universe for the same reasons one cannot solve quantum tunneling etc.--infinite time is required.

Though neither Kaku nor anyone else I have read has said so, it seems that the math of 26 D geometry is so powerful that it could describe any possible universe. In this case, it is understandable why it lacks a conceptual foundation as it has no special relation to our universe. Anything expressible as an algorithm or number can be derived from anything else by writing the appropriate algorithm or codec, so the rules of chess, Avogadro´s number, the dimensions of the great pyramid and the dynamics of ant colonies are deriveable too.

One of the things that makes many think math is out there in the universe rather than in here in our minds. Naively, one could say that the structure of the universe makes, our mind so is it a surprise that our thoughts (e.g., mathematics) mirror the universe? The debate on the 'unreasonable effectiveness of mathematics (Wigner) continues but to me it is just another group of confusions about which language games we are playing (see my other articles). For a recent excellent article by an engineer (though of course with no clue about Wittgenstein or language games) see Derek Abbott 'The reasonable ineffectiveness of mathematics' Vol. 101, 0018-9219 _ 2013 IEEE No. 10, October 2013 | Proceedings of the IEEE 2147-2153.

The compelling way in which pure math yields physical results is illustrated by the discovery of a mathematician who was just looking for another

solution to the equations of general relativity. By assuming a black hole rotates, Roy Kern in 1963 found a solution and thus an exact representation of black holes. They will collapse into a ring so that objects approaching from the top or bottom will experience a finite curvature (gravity) so it might be able to get to the mirror universe which exists on the 'other side` of spacetime. But, at this density of mass- energy, general relativity breaks down and quantum effects probably dominate so maybe we can find an answer with string theory. Likewise, with time travel.

By making various assumptions about the universe one can come up with many different solutions to relativity. In 1949 Godel (he of Incompleteness Theorem fame) showed that if one assumes the universe rotates, time can bend in a circle or CTC (Closed Timelike Circle). It turns out that van Stockum had derived a CTC solution in 1936 (pointed out by cosmologist Frank Tipler, who recently became infamous for his book 'proving' the existence of God from physics) and many have done so since Godel, usually using black holes or an expanding universe. It is now realized that there are an infinite number of such `pathological` solutions to the equations of general relativity. It appears that all CTC will violate causality. As one of the principal founders of quantum cosmology, Hawking proposed that wormholes could be used to enter other universes. Ever daring, he used quantum theory to treat the entire universe as a quantum particle represented by a wave function which will be large for our universe but small for others.

Assuming they are connected by wormholes, Sidney Coleman summed the contributions of an infinite series of universes, to show that if the cosmological constant (CC) is zero then the wave function is large (i.e., high probability). If the CC is not zero, then that universe has zero probability (i.e., the effect of an infinite number of parallel universes is to keep CC zero in ours), which means the CC cancels to one part in 10 to the 100th!

Acting on a request from Carl Sagan, Thorne et al (1985) discovered `transversible wormholes` --the first ones that were actually feasible in the

sense that a human might actually survive using them. It seems theoretically possible to create one using the negative energy (i.e., less than in a vacuum) of the Casimir effect (a quantum effect thought to occur everywhere all the time) in which particle-antiparticle pairs appear and self-annihilate at very high rates.

Godel showed that math is 'incomplete' (see my articles for a Wittgensteinian analysis of this) and physicists have shown that quantum theory is also 'incomplete' (e.g., Schrodinger´s cat is dead and alive at the same time) but the string theory of quantum gravity has an equation (wave function) for the entire universe and there is no longer an observer and an observed because it is a 10 dimensional theory and so renormalizable. However, the cosmic wave function is a composite of all possible universes so indeterminacy remains. The smallest quantum unit is the space of all possible universes, in some of which the cat is dead and some alive. Quantum theory and string theory seem very reductionistic, but one equation for the universe seems as holistic as it´s possible to get!

Superstring theory (SST) has stretched math to its limits and needs more advanced math to evolve. Physics needs the self-consistent structures of math so it combines topology and the Reimannian geometry of general relativity (ie, groups of quantum field theories) to eliminate the infinities (i.e., renormalize) of the quantum theory of gravity.

It seems to me that the most complex products of the brain--SST and topology, are recursive to quantum field theory and the behavior of particles and the entire universe. Though Kaku does not discuss incompleteness, we know that math is proven (Godel, Chaitin, etc.) to be forever necessarily incomplete - i.e., infinitely many well- formed theorems in any mathematical system can never be proven to be true or false. Then, since math and physics are now fused at the highest level (Superstring theory), the one can create a language game in which there is a nontrivial sense in which physics and the whole universe and the mind are 'incomplete' as well. What is the

significance if many laws of physics in some possible universes (or ours) and/or many thoughts in our brain are never to be consistent with or derivable from the others? Or rather there is no significance or many views or concepts (language games) of 'significance'.

String theory unites physics with many of the most advanced and formerly separate areas of math--SuperLie and Kac-Moody algebras, modular functions, finite groups, algebraic topology, Riemannian geometry and cohomology theory. But it remains without a conceptual basis, so we are left to wonder if there is anything other than powerful math that unites quantum theory and gravitation.

Kaku does not dwell on the problem of emergence, but physical scientists can rarely resist reductionism. However, the quantum field equations are so difficult that they cannot be solved for one atom and not even for a vacuum. They require an infinite time to compute. One only finds out the emergent properties of things that result from combining smaller things by seeing what they are like after the fact--whether they are quarks making a proton, molecules making cells, or stars making a universe. One also has uncertainty and chaos. We have no way to determine in what way and when a pile of sand will collapse. Physics has to wait for the results at the micro (subatomic particles) and macro (cosmological observations) scales before advancing and it is full of uncertainty and bizarre phenomena. Also, there seems to be no way we can ever test SST (the theories change constantly but the bottom line is that we will never be able to do experiments at the requisite energy (10 to the 19th BEV) –i.e., the Planck length (10 to -33cm)) So, physics and even math (incompleteness, etc.) seem to be just as empirical and 'unsolvable' as biology (consciousness, free will) and we must accept the 'uncertainty' of our most advanced concepts as we do that of our everyday life.

RELIGION

Review of Religion Explained-- The Evolutionary Origins of Religious Thought by Pascal Boyer (2002)

Michael Starks

ABSTRACT

You can get a quick summary of this book on p 135 or 326. If you are not up to speed on evolutionary psychology you should first read one of the numerous recent texts with this term in the title. One of the best is "The Handbook of Evolutionary Psychology" by Buss, but it is big and expensive. Until about 15 years ago, ´explanations´ of behavior have not really been explanations of mental processes at all, but rather vague and largely useless descriptions of what people did and what they said, with no insight into why. We might say that people gather to commemorate an event, praise god, receive his (or her or their) blessings, etc., but none of this describes the relevant mental processes so we might say they are explanations in much the same way that it explains why an apple drops to the ground if we say its because we released it and it's heavy-there is no mechanism and no explanatory or predictive power. This book continues the elucidation of the genetic basis of human behavior which has been almost universally ignored and denied by academia, religion, politics and the public (see Pinker´s excellent book ``The Blank Slatè`). His statement (p3) that it is meaningless to ask if religion is genetic is mistaken as the percentage of variation due to genes and environment can be studied, just as they are for all other behaviors (see e.g., Pinker). The title should be "Preliminary Attempts to Explain Some Aspects of Primitive Religion" since he does not treat higher consciousness at all (e.g., satori, enlightenment etc.) which are by far the most interesting phenomena and the only part of religion of personal interest to intelligent, educated people in the 21st century. Reading this entire book, you would never guess such things exist. Likewise, for the immense field of drugs and religion. It lacks a framework for rationality and does not mention the dual systems of thought view which is now so productive. For these I suggest my

own recent papers. Nevertheless, the book has much of interest and in spite of being dated is still worth reading.
Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

"God is dead and man is free" Nietzsche

"This very body the Buddha, this very earth the lotus paradise" Osho

´´I can well imagine a religion in which there are no doctrines, so that nothing is spoken. Clearly, then, the essence of religion can have nothing to do with what is sayable´´ Wittgenstein

When this book appeared, it was a pioneering effort, but now there are endless discussions of this topic and so I will give a sufficiently detailed and accurate summary that only specialists will need to read it. You can get a quick summary of this book on p 135 or 326. If you are not up to speed on evolutionary psychology you should first read one of the numerous recent texts with this term in the title. The best are "The Handbook of Evolutionary Psychology" 2nd ed (2015) and The 5th ed. of Evolutionary Psychology by Buss, but they are big and expensive.

Until about 15 years ago, ´explanations´´ of behavior have not really been explanations of mental processes at all, but rather vague and largely useless descriptions of what people did and what they said, with no insight into why. We might say that people gather to commemorate an event, praise god, receive their blessings, etc., but none of this describes the relevant mental processes so we might say they are explanations in much the same way that it explains why an apple drops to the ground if we say it's because we released it and it's heavy--there is no mechanism and no explanatory or predictive power.

This book continues the elucidation of the genetic basis of human behavior which has been almost universally ignored and denied by academia, religion, politics and the public (see Pinker´s excellent book ``The Blank Slate``). His statement (p3) that it is meaningless to ask if religion is genetic is mistaken as the percentage of variation due to genes and environment can be studied, just as they are for all other behaviors (see e.g., Pinker).

The title should be ´´Preliminary Attempts to Explain Some Aspects of Primitive Religion´´ since he does not treat higher consciousness at all (e.g., satori, enlightenment etc.) which are by far the most interesting phenomena and the only part of religion of personal interest to intelligent, educated people in the 21st century. Reading this entire book, you would never guess such things exist. Likewise, for the immense field of drugs and religion. How and why do entheogens trigger the inference engines and what role have they played in religion and life for the last million years? There is a huge mine of info on drugs and behavioral templates, but you won´t find even a clue here. You can start with the recent books ´´Entheogens and the Future of Religion" and ´´Buddhism and Psychedelics´´ or you can read my friend Alexander Shulgin's amazing probing of the ´cognitive templates in PHIKAL and TIKAL, available, as almost everything now, free on the net. One of the most unusual of the drug probes is ketamine, described by many, most notably in "Journeys into the Bright World" by Altounian and Moore, Jansen in "Ketamine" and in probably the most detailed account of a single entheogenic drug by a single user in the last two chapters of John Lilly´s ´´The Scientist``. Lilly, almost single handedly the founder of dolphin research, was a generation or more ahead of nearly everyone on many topics and he also probed his own mind with LSD and isolation tanks. See his `Simulations of God`(1975)(and my review of it) for his speculations on Mind, God and Brain and more aspects of the spiritual and mental not touched upon by Boyer. Also for recent heroic self-therapy with entheogens see 'Xenolinguistics' by Slattery and 'DMT & My Occult Mind' by Khan.

There is also virtually nothing here about the relation between physical and mental states. The practice of the many forms of yoga was highly advanced thousands of years ago. Its primary aim was to trigger spiritual states with

body energy and the reverse. There is an immense literature and hundreds of millions have practiced it. The best personal account I know of by a mystic detailing the interaction of the mental and physical via yoga is found in `The Knee of Listening` by Adi Da (see my review here). Interwoven with the spellbinding account of his spiritual progress are the details of his work with the shakti energy of yoga (e.g., p95-9, 214-21, 249,281-3, 439-40 of the 1995 edition--preferable to the later ones). These few pages are worth more than a whole shelf of yoga books if you want to get to the heart of the mind/body relation in spirituality.

Zen and other practices probe the brain´s templates with meditation and tricks. Boyer does not understand that the major religions (and countless minor ones) were started by persons who broke the mold—i.e., somehow blocked or evaded some templates to destroy much of the ego and to discover aspects of their mind normally hidden. It is not hard to see why full blown enlightenment is rare, as those who have it stop behaving like monkeys (i.e., fighting, deceiving, reproducing) and this would be heavily selected against. One might say those who achieved it are the only ones who became fully human (i.e., Jesus, Adi Da, Mohammed, Buddha, Mahavira, Rumi, Osho and 1000 or so others we know of). It seems Boyer has no personal experience with meditation, entheogens and higher consciousness (e.g., see pages 317, 320-324) so he clearly does not treat all of religion. This is again evident (p32) when he says religion has no origin or clear explanation. Of course, this is true of the primitive religions he discusses, but Buddhism, Christianity, Islam, etc., have very clear origins and explanations in the enlightenment of Jesus, Buddha, Mohammed etc. He is mistaken (p308) in his belief that Eastern religion is mostly about ritual, rather than personal experience and inner states and that it got such ideas from Western philosophy (3000 years ago!). Amazingly, he rejects William James´s notion that religion is a result of the experiences of exceptional individuals that are subsequently degraded by the masses (p310). James is clearly right and Boyer is again, only thinking of primitive religion. Perhaps the best personal account of the various states of samadhi, enlightenment, etc. is Adi Da´s book--`The Knee of Listening` but by far the best source for personal accounts by an enlightened master are the numerous books, audios and videos by Osho, all free on the net.

Witnessing one´s thoughts is one of the commonest techniques of beginning meditators in many different traditions. Further progress fuses the perceiver and perceived (all is one). One wonders how this relates to the templates—do they enter consciousness, does spiritual change open new neural connections or close some? Cognitive psychology has barely started on this but is would be interesting to see PET or fMRI on an enlightened person or one in a samadhi state with good controls. Though he is right that many experiences are of some agent, advanced states have been described in a vast literature which shows they typically have no thoughts, no mind, no person, no god. This would seem to be the ultimate in decoupling templates in a functional person.

For supernatural types of religious concepts to evolve and survive, they should belong to one of the basic ontological categories or templates (plant, tool, natural object, animal, person etc.) which the brain uses to organize perception and thought. These are commonly given counterintuitive properties such as prescience, telepathy, immortality, abilility to hear one's words or read one's thoughts, ability to heal or confer great power etc. Good supernatural concepts usually allow all inferences not specifically barred by the violation of intuition—i.e., a god will have all human properties but does not age or die. The huge number of religious concepts is contained in this short list of templates. It is the counterintuitive nature of the concepts that makes them easy to remember and to transmit to others and this seems to by one reason why supernatural concepts are a central part of nearly all religions. Supernatural concepts interact with other types of templates such as intuitive psychology, intuitive physics, structure function and goal detection. If it activates physics, goal detection, intuitive psychology and intentional use then it will be a human-like being with superhuman properties. This is standard cognitive psychology and counterintuitive parts are added on for religious use. There is abundant evidence that brain areas that are activated when we do something are also activated when we see someone else doing a similar thing (mirror neurons). It is feasible that this is correlated with the need to join in and the satisfaction from participating in the rituals integral to society (sports, politics, music etc.) and religion.

There is also evidence that seeing other people's emotions activates the same areas as our own. Our theory of mind (i.e., of other people's mental life--intuitive psychology) seems not to be one inference engine, but the sum of many and, as more research is done, more modules will be discovered. Another critical feature of inference engines is that they often run in decoupled or imaginary mode while we consider the past or the future. This starts quite early as shown by the common presence of imaginary playmates in children, their ability to grasp stories and TV, and he notes that research seems to show that children who create playmates seem to be better at grasping other people's mental states and emotions. The point in this context is that it seems quite natural to ascribe humanlike characteristics to spirits, ghosts, gods, etc. when there is no evidence at all for their actual presence.

The innate inference engines are automatic as they have to be fast and not distract us. The mind was not evolved as an explanation machine and before the recent rise of science, nobody ever tried to explain why our foot moves when we walk, an apple falls to the ground, we get hungry or angry or why we experience or do anything. Only bizarre or cosmic occurrences like lightning or sunrise needed a cause. Our intuitive psychology and agency templates also prompted us to ascribe good and bad luck to some agent. Much of this may sound speculative but now that EP (evolutionary psychology) is a major paradigm, the evidence of such innate functions in early childhood and infancy is mounting rapidly.

Supernatural agents (including deceased ancestors) are treated by intuitive psychology as intentional agents, by the social exchange system (a part of or variant on the cost/benefit systems) by the moral system as witnesses to moral actions, and by the person-file system as individuals. Since all these systems can operate in decoupled mode, there is no need to consider whether these agents really exist. They are driven by relevance, by the richness of inferences that result and by the ease with which they can be remembered and communicated. The templates are highly tuned to gather info, get cooperation and calculate benefits in a very rapid, subconscious and normally error-free way, while conscious reason is slow and fallible. In modern times,

the ego has time to waste on debate, explanation, and interpretation in endless attempts to deceive and manipulate others for personal gain. With large, mobile populations and fast communication the results of our social exchange, evaluation of trust, cheater detection and other templates are often useless and self-destructive. Strategic info (that which passes the relevance filters) activates the engines related to social interaction and our knowledge of what info others have is a critical part of the social mind. The supernatural agents typically have perfect knowledge. Though he does not seem to mention it, powerful people often come to have some of the characteristics of supernatural agents and so people will start to respond to them as to gods. Aliens, UFO's, new age mysticism, astrology, fantasy and sci-fi draw great attention due to activation, and often possess agents with strategic info. However, hundreds of millions have followed charismatic leaders with false strategic info (i.e., quasi-supernatural agents) to their deaths (The Branch Davidians of Waco, Communism, Nazism, Vietnam, Jonestown, George Bush, Comet Kahoutek etc.).

Social interactions require a social mind—i.e., mental systems that organize them. Like most behavior, it is only recently that it was generally realized that we needed built-in mechanisms to do this. Strategic information is whatever activates the social mind. Our theory of mind tells us to what agents this info is also available. It is common to attribute to supernatural agents the ability to fully access info that would normally be partly or totally unavailable to others.

All the engines must have some kind of relevance filter so that they are not constantly activated by trivia. We have taxonomies that tell us how to group things in ways relevant to their behavior or properties in the world. We expect large catlike things with big teeth and claws to be predators and not herbivores. Spirits fit human taxonomy and automatically have needs and desires, likes and dislikes and will thus give rewards and punishments and all any culture has to do is specify what these are. Those concepts giving the richest inferences with the least effort will survive.

A common viewpoint is given by relevance theory, which tries to determine how and why some concepts are more easily transmitted. Presumably, concepts which trigger engines more intensely or frequently, or more different engines, will be superior. So, we may have many concepts that are easier to remember and apply, rather than because they make sense or are useful in some way. This may help to explain the existence of many concepts or practices that seem arbitrary or stupid or which make life more difficult and applies to all of culture, not just to religion.

Nearly all religions have full access agents—i.e., they know all or nearly all about us and Boyer distinguishes 3 classes--divine brutes with little or no access but which nevertheless have power, Aquinas agents which know everything and full strategic agents which have access to all the strategic or important info. He says that this may account for our interest in knowing other person's religious ideas or in converting them to ours. Only in this way can we understand how they may behave and interact.

Agents that are aware of and able to affect our social interaction are richer in inferences, and so are easier to mentally represent and remember and thus enjoy a great advantage in cultural transmission. Thus, we can now say that religion does not create or even support morality, but that our built in moral intuitions make religion plausible and useful. Likewise, our mechanisms to explain good and bad luck makes their connection with supernatural agents simple. And since we share our moral system and our information with them, it is natural to expect they will enforce our attitudes.

Altruism and cheating are central parts of human behavior. To show passionate feelings and honesty that are genuine (difficult to fake) is of great social (and genetic) value. This can be reinforced by religion as one would choose to cooperate with such persons rather than with rational calculators who may change their mind or cheat anytime their inference engines calculate that it is in their best interests. This system also requires that cheaters be punished, even when the cheating has minimal social cost. One common group of religious concepts are those that make cheating immoral. The mechanism is feelings (e.g., anger, jealousy, resentment, confusion) rather

than rational cogitation. We feel that it is wrong for someone to steal another's money rather than needing to sit down and think--well if he takes that money, then maybe he will take mine or he will have some future advantage over me etc. Perhaps here is one place that guilt enters in order to make the socially (genetically) destructive practice of cheating less appealing. This takes us into the huge literature on cheaters and cooperators, hawks and doves and pretenders and into reciprocal altruism and game theory.

Many types of commitment gadgets have evolved which tend to ensure cooperation--keeping track of reputation, legal or quasi-legal binds (contracts), strong passions, compulsive honesty, resentment and need to punish cheaters. Cooperation gadgets are built in also--moral intuitions, guilt, pride, gratefulness, hostility. In contrast to the nearly universal idea that moral realism (that behavior itself has a specific moral value that does not depend on one's viewpoint) is only developed by adults or is given by religion, it is now clear that this appears in 3 and 4 year olds and changes little with age. Methods have now been developed to study infants and in late 2007 a study appeared in Nature which showed that they can distinguish helper from non- helper objects. But intuitive morality will often give the wrong results for adults in the modern world.

Most of the basics of what has formerly been regarded as culture, is now known or suspected to be inherited. Pinker lists hundreds of different aspects of human societies that are universal and thus good candidates. One can compile a very long list of religious concepts that we don't need to be taught---spirits understand human thoughts, emotions and intentions and differentiate between wishes or images and reality etc.

It seems that the only feature of humans that is always projected onto gods, spirits, ghosts, etc, is a mind much like our own. Intuitive psychology applies to intentional agents in general (i.e., persons, animals and anything that appears to move in pursuit of its own goals). Intuitive physics is probably also composed of many subsegments, and must be connected with the intentionality module –e.g., when a lion is chasing an antelope, we know that if it changes course, the lion will probably do so. One would expect that

detecting such agents was a very ancient evolutionary priority and even 500 million years ago a trilobite that lacked such genes would soon be lunch. When the genes are mapped we can expect to find similar ones in fruitflies, just as we have for other genes such as the ones controlling body segmentation and immunity.

Like our other concepts, religious ones are often vague and their use idiosyncratic due to the fact that they result from the unconscious functioning of inference engines. We cannot say precisely even what simple words mean, but we know how to use them. Just as Chomsky discovered depth grammar, one might say that Wittgenstein discovered depth semantics.

Wittgenstein was the first (and still one of the few) who understood that what philosophy (and all attempts to understand behavior) was struggling with was these built-in functions that are inaccessible to conscious thought. Though I have never seen it stated, it seems reasonable to regard him as a pioneer in cognitive and evolutionary psychology.

Boyer takes a new view of death also. Corpses have properties that make supernatural concepts relevant apart from our need for comfort and this part of religion may be less about death than about dead bodies. They produce a dissociation between the animacy, intuitive psychology and person file systems. We see such dissociation in autism and odd neurological states such as Capgras syndrome.

He sees this as another way that culture makes use of salient gadgets (events, objects etc.) which are highly relevant and grab the attention of the inference engines. And since this book appeared, evidence continues to accumulate that genes create culture to a much greater extent than most people (including scholars) ever imagined.

Nobody ever thinks to inquire as to the motives if a rock that falls and hits us, but we always do if it comes from the hand of a person. Even a very young child knows this, due to its intuitive psychology, agency, animism and other engines. These engines must, in their orginal forms, be hundreds of millions

of years old. A carboniferous dragonfly differentiated between animate and inanimate objects and calculated the trajectory of its prey.

Religion originally worked in an atmosphere of perpetual fear. Inference engines evolved to find mates and food and shelter and avoid death, hence the approach to the gods as a powerless supplicant and the use of appeasement rituals and offerings (as we would to a person). Our danger avoidance is highly imperfect in the modern world due to guns, drugs and fast transport (cars, skis). Everywhere in the world you can see people walking in the streets just a step away from speeding vehicles, even though at least a million a year are run down.

He says (p40) that memes (Dawkins famous cultural analog of the gene) are not a very good concept for cultural transmission since ideas are changed by each person, while genes remain the same. However, what about media—i.e., film, TV, print, email? They replicate more precisely than genes. These are now the prime means for transmitting and checking the validity of memes, not just what someone says. In any case, genes are not perfect either. Just as there is a phenotype corresponding to the geneotype, there is a phene corresponding to the meme.

Why do we invoke supernatural agents for good and bad luck? They activate our social exchange systems and since we regard them as having strategic info they can control what happens.

It occurs to me that perhaps there is such great opposition to genetic explanations for behavior because people feel anyone who accepts this will automatically reject the social exchange and other templates and will always cheat. Or perhaps they fear the intuitive psychology will no longer work.

Social rituals are examples of what psychologists have termed precautionary rules and these commonly include concerns about pollution, purification rituals (activation of the contagion system), contact avoidance, special types of touching, special attention to boundaries and thresholds, rule violations, use of certain numbers of bright colors, symmetrical arrays and precise

patterns, special sounds or music, special dance and other movements, etc. All these trigger certain groups of templates, create satisfying feelings and are commonly coupled to religious concepts, and to politics, sports, hunting and agriculture, marriage, child rearing, music, art, folklore, literature etc.

The agency detecting systems (e.g., predator and prey detection) are biased for over-detection—i.e., they do not need to see a lion or a person to be activated, but only a footprint or a sound of the right kind. Based on very little info, these systems then produce feelings and expectations about the agents' nature and intentions. In the case of supernatural agencies our intuitive psychology templates are also activated and generally produce a person-like entity plus the counterintuitive features, but their precise characteristics are generally left vague.

The attaching of a counterintuitive tag (e.g., rising from the dead) to an agent (e.g., Jesus) or other ontological category makes it easy to remember and a good candidate for religion.

All these modules are inherited but of course a baby does not have them fully developed and only with time and a `normal` environment will they emerge.

I read this shortly before reading Ken Wilber´s ´´Sex, Ecology and Spirituality´´ and could see on nearly every page how outdated and empty are most of the works which Wilber is discussing. A large part of Wilbur´s book and of the hundreds he analyzes on religion, psychology and philosophy are now archaic. However, Wilbur has written many books of great interest on spirituality and it is sad that Boyer does not even reference him-- but neither does he reference drugs, Wittgenstein, meditation, yoga, satori or enlightenment in his index!

One might speculate that the Nobel peace prize is given to those who are best at encouraging us to extend coalitions to include other countries or the world. Or, one might say they get the prize for efforts to turn off the `cheater detector` or social exchange templates which require that only those who

reciprocate are included in one´s group and given access to resources (which most of the world´s poor clearly cannot do).

He gives a brief summary of some of the self-deceptive inferences which play a role in religion as in all of life--consensus, false consensus, generation effect, memory illusions, source monitoring defects, confirmation bias and cognitive dissonance. Like the other templates, these gave very good results 100,000 years ago but with life in the fast lane they can now prove fatal for individuals and for the world. Coalitional intuitions and essence concepts are delineated as critical parts of human behavior. Humans automatically form groups and show hostility to persons not in the group and wholly undeserved friendship to those in the group (coalitional intuitions), even when the group is composed of total strangers. This relates to operation engines such as cost/benefit and calculation of reliability mentioned before. Essences are the concepts we use to describe our feelings (intuitions) about coalitions and other social categories (e.g., hierarchies and dominance). Although these mechanisms evolved in small groups, nowadays these are commonly operating with people to whom we are not closely related, so they often give false results. Stereotyping, racism and its accompaniments (i.e., arbitrary (or not so arbitrary) set distinctions) are probably the results of the operation of coalitional intuitions built into our brains, rather than stereotyping being a primary psychological function and the coalitions with their exclusion, dominance, and antipathy being the results. These engines may well explain the `social magic` that forms and guides societies.

He suggests that one might explain fundamentalism as a natural reaction to the common violation of coalitional thinking in modern societies. Freedom to act as one chooses and in direct opposition to others in the same community creates strong and often violent feelings in those without the education or experience to deal with diversity and change. They often want public and spectacular punishment to assuage their feelings. Fundamentalism may best be explained as attempts to preserve hierarchies based on coalitions, when these are threatened by easy defection or inattention. These are functioning in all people all the time but they come to the surface mainly when there is a situation that creates some special threat (i.e., modern life). Of course, as

always, we need to keep in mind that the ultimate source and payoff for all behavior is in the genes.

Though he says little about it, the notions of ontological categories and counterintuitive tags that `stick´ to them also go far to explain magic, the paranormal, folklore, mythology, folk medicine, astrology, theology, miracle workers, demonic and angelic possession, the arts, and formerly even much of science. Rituals act as snares for thought. Our contagion templates are powerful activators of behavior and it is natural to include many purification rituals in religion. They also make use of our planning systems, which we can see in extreme form in obsessive compulsive disorder. There is preoccupation with colors, spaces, boundaries, movements and contact. Salient gadgets are incorporated. We have a powerful need to imitate others.

Rituals activate our undetected hazard systems. Sacrificial offerings to the unseen agents make use of our social exchange systems. Our coalitional intuitions are satisfied by group rites and marriage. The `naive sociology` of the common man extends into much philosophy, sociology, theology, anthropology, psychology, economics, politics and is the result of our attempts to make sense of our own behavior but this is the result of the automatic and unconscious functioning of our templates. Thus, much of culture seems magical-- hence the term `social magic`. Inevitably, naive sociology is weak, so rituals and belief systems emphasize the benefits of cooperation and the costs of cheating or defection. The rituals and gadgets stimulate memory and satisfy the contagion system. Participation signals cooperation and the gods and spirits are optional. So, templates lead to religion which leads to doctrines and not the reverse.

I think he goes seriously astray when discussing science vs. religion (p320). He says it is wrong to talk about religion as a real object in the world (whatever that might be), but of course the external and internal (mental) phenomena can be studied as well as any other, and he shows in this book that religion is a branch of cognitive psychology. He says there is no science as such, and we know that he means it´s complex, but then there is no religion, law, sports, auto racing or anything at all, as such. He objects to `pop

theology` which says religion makes the world more beautiful or meaningful or that it addresses ultimate questions, but all religion addresses the ultimate questions and tries to make the world meaningful and less ugly. In addition, what I call `advanced religion` --i.e., the way it starts in the no-minds of Jesus, Buddha, Osho etc.-- has a quite different take on the world than the primitive religion he discusses in this book (e.g., see the 200 books and DVD´s of Osho at Oshoworld.com or on p2p, or see Wilber, Adi Da etc.). Again, on p 327 he thinks there is no religious center in the brain and though this is probably true for primitive religion, it seems more likely that there are centers (networks of connections) for the experiences of satori and enlightenment and maybe for entheogens too. He also thinks (p321) that science is less natural and more difficult than religion, but in view of the huge number of scientists and the facts that nearly everyone is able to absorb science in grade school, and that there have probably been less than 1000 enlightened persons in all of human history, it seems clear that situation is quite the reverse. It is vastly less difficult to become a botanist or a chemist than to dissolve one´s ego! Natural selection will clearly eliminate higher consciousness genes but the rational calculus of science is quite consistent with gathering resources and producing children. Of course, the problem is that he is again fixated on primitive religion.

He sums it up by saying (p 135) that religious activities activate inference systems that 'govern our most intense emotions, shape our interaction with other people, give us moral feelings and organize social groups`. Of course, these have nothing to do with satori or enlightenment! He notes that religious ideas are parasitic upon our intuitive ontology (i.e., they are relevant). They are transmitted successfully due to mental capacities that evolution has already created. As with other behaviors, religion is a result of aggregate relevance—i.e., the sum of the operation of all the inference engines. Thus, religious concepts and behavior are present not because they are necessary or even useful, but because they easily activate our templates, are easy to remember and transmit and so they survive over time. He gives a final summary (p326) of ``The Full History of all Religion (ever)`` as follows (of

course it leaves out `advanced religion`). Among the millions of things people discussed were some which violated our intuitions and this made them easier to remember and transmit. Those that were about agents were especially salient as they activated rich domains of possible inferences such as those about predators and intuitive psychology. Agents with counterintuitive properties, especially ability to understand and affect human behavior or the world were strongly transmitted. They became connected with other strange and somewhat counterintuitive events such as death and feelings about the continued presence of the dead. Somehow rituals arise and become associated with the powerful supernatural agents. Some persons will be more skilled at conducting such rituals and guiding the interactions with the spirits. Inevitably they will create more abstract versions and start to acquire power and wealth. However, people will continue to have their own inferences about religion.

He notes that religion owes much to the probably recent (in hominoid evolution) appearance of the decoupling ability and it occurs to me that one might regard entheogenic drug experiences, satori and enlightenment as the ultimate in decoupling--no past, no future, and not even a present-- no here, no there, no me, no you and all is one thing and illusory. The other key transition in evolution is posited to be the ability to accept the violation of intuitive expectations at the level of ontological domains (i.e., the classes of things--plants, people, moving things etc.). He regards these capacities as leading to the invention of religion (and of course much else) but it´s clear that Buddha and Jesus went quite a bit further. He rejects the idea that religious thoughts made minds more flexible and open (rather they became susceptible to certain concepts that activated the inferences of agency, predation, morality, social exchange, death etc.), but something made us susceptible also to the entheogens, satori and enlightenment and this is as flexible and open as people can be and remain sane. So it is clear that much remains to be discovered about spirituality.

Review of Sex, Ecology, Spirituality by Ken Wilber 2nd ed 851p (2001)

Michael Starks

ABSTRACT

It is both amazing and fitting that this huge, jargon-laden (this book really needs a glossary!), heavily academic work has become a best seller in the world of the educated. One has to be dedicated to learn the jargon and then plow through 551 pages of text and 238 pages of notes. Meanwhile, we are told time and again that this is just an outline of what is to come!

Though he severely criticizes the excesses of the three movements, this is a deconstructive and New Age Mystical and postmodern interpretation of religion, philosophy and the behavioral sciences from a very liberal, spiritual point of view—i.e., without the worst of decon, pm and NAM jargon, rabid egalitarianism and anti-scientific anti-intellectualism.

He analyzes in some detail the various world views of philosophy, psychology, sociology and religion, exposing their fatal reductionistic flaws with (mostly) care and brilliance, but most of the sources he analyzes are of almost no relevance today. They use terminology and concepts that were already outdated when he was researching and writing 20 years ago. One has to slog thru endless pages of jargon –laden discussion of Habermas, Kant, Emerson, Jung et.al. to get to the pearls.

You get a terrific sampling of bad writing, confused and outdated ideas and obsolete jargon.

If one has a good current education, it is doubly painful to read this book (and most writing on human behavior). Painful because it´s so tortured and confusing and then again when you realize how simple it is with modern psychology and philosophy. The terminology and ideas are horrifically confused and dated (but less so in Wilber´s own analysis than in his sources).

This book and most of its sources are would-be psychology texts, though most of the authors did not realize it. It is about human behavior and reasoning-about why we think and act the way we do and how we might change in the future. But (like all such discussion until recently) none of the explanations are really explanations, and so they give no insight into human behavior. Nobody discusses the mental mechanisms involved. It is like describing how a car works by discussing the steering wheel and metal and paint without any knowledge of the engine, fuel or drive train. In fact, like most older ´explanations` of behavior, the texts quoted here and the comments by Wilber are often more interesting for what kinds of things they accept (and omit!) as explanations, and the kind of reasoning they use, than for the actual content.

If one is up on philosophy and cognitive and evolutionary psychology, most of this is archaic. Like nearly everyone (scholars and public alike--eg, see my review of Dennett´s Freedom Evolves and other books), he does not understand that the basics of religion and ethics-- in fact all human behavior, are programmed into our genes. A revolution in understanding ourselves was taking place while he was writing his many books and it passed him by.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Wittgenstein and Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

´Anything that can be said can be said clearly` Ludwig Wittgenstein

`Heaven and Earth are inhumane--they view the myriad creatures as straw dogs` TaoTe Ching

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As with all reasoning and explaining one now wants to know which of the brains inference engines are activated to produce the results. It is the relevance filters which determine what sorts of things we can accept as appropriate data for each engine and their automatic and unconscious operation and interaction that determines what we can produce as an answer.

Cognitive and evolutionary psychology are still not evolved enough to provide full explanations but an interesting start has been made. Boyer´s `Religion Explained` is a good place to see what a modern scientific explanation of human behavior looks like (though it completely misses enlightenment!). Pinker´s `How the mind Works` is a good general survey and his `The Blank Slate` (see my reviews) by far the best discussion of the heredity-environment issue in human behavior. They do not explain all of intelligence or thinking but summarize what is known. See several of the

recent texts (ie, 2004 onwards) with evolutionary psychology in the title or the web for further info.

We now recognize that the bases for art, music, math, philosophy, psychology, sociology, language and religion are found in the automatic functioning of templates or inference engines. This is why we can expect similarities and puzzles and inconsistencies or incompleteness and often, dead ends. The brain has no general intelligence but numerous specialized modules, each of which works on certain aspects of some problem and the results are then added, resulting in the feelings which lead to behavior. Wilber, like everyone, can only generate or recognize explanations that are consistent with the operations of his own inference engines, which were evolved to deal with such things as resource accumulation, coalitions in small groups, social exchanges and the evaluation of the intentions of other persons. It is amazing they can produce philosophy and science, and not surprising that figuring out how they work together to produce consciousness or choice or spirituality is way beyond reach.

Wilber is a bookworm and he has spent decades analyzing classic and modern texts. He is extremely bright, has clearly had his own awakening, and also knows the minutiae of Eastern religion as well as anyone. I doubt there are more than a handful in the world who could write this book. However, this is a classic case of being too smart for your own good and his fascination with intellectual history and his ability to read, analyze and write about hundreds of difficult books has bogged him down in the dead past.

Though he severely criticizes the excesses of the three movements, this is a deconstructive and New Age Mystical and postmodern interpretation of religion, philosophy and the behavioral sciences from a very liberal, spiritual point of view—i.e., without the worst of decon, pm and NAM jargon, rabid egalitarianism and antiscientific antiintellectualism. As Boyer points out (p20), when fear and poverty give way to security and wealth, the results of the inference engines change and you find religion changing from appeasement rituals for the powerful gods in a hostile universe to self-empowerment and control in a benevolent one (i.e., New Age Mysticism).

He analyzes in some detail the various world views of philosophy, psychology, sociology and religion, exposing their fatal reductionistic flaws with (mostly) care and brilliance, but most of the sources he analyzes are of questionable relevance today. They use terminology and concepts that were already outdated when he was researching and writing 20 years ago. One has to slog thru endless pages of jargon –laden discussion of Habermas, Kant, Emerson, Jung et.al. to get to the pearls. He immerses himself in Freud and the psychoanalytic interpretation of dreams (eg, p92), though most now regard these as merely quaint artifacts of intellectual history.

If one is up on philosophy and cognitive and evolutionary psychology, most of this is archaic. Like nearly everyone (scholars and public alike--eg, see my review of Dennett´s Freedom Evolves and other books), he does not understand that the basics of religion and ethics-- in fact all human behavior, are programmed into our genes. A revolution in understanding ourselves was taking place while he was writing his many books and it largely passed him by, though I have not read his latest works.

If one has a good current education, it is doubly painful to read this book (and most writing on human behavior). Painful because it´s so tortured and confusing and then again when you realized how simple it is with modern psychology and philosophy. The terminology and ideas are horrifically confused and dated (but less so in Wilber´s own analysis than in his sources). We now think in terms of cognitive templates which evolved about 100,000 years ago (in most cases several hundreds of millions of years earlier in their original forms). They operate automatically, are not accessible to consciousness and there is abundant evidence that they severely limit the behaviorial options for individuals and for society. His new preface notes one such study, but the book needs a total rewriting.

There is an enormous resistance in us to accepting ourselves as part of nature, and in particular, any gene based explanations of behavior. Like all our thinking, these feelings are due to the operation of the cognitive templates, so perhaps it is the conflict between biological explanations and our automatic

intuitive psychology or social mind systems that is responsible. These genetic systems have probably operated for hundreds of thousands of years and the new data from science is telling us the results of their operations (our feelings about what to do) are wrong. There is much interesting work to be done explaining social, economic and political behavior from this new viewpoint.

Some jargon you will need is on pg X of the new preface where you find that the constantly used vision-logic is postformal cognition or network-logic or integral-aperspectival (all points of view are equal and must be considered). He also states the postmodern manifesto here: all views equal, dependent on limitless contexts, and merely interpretations. As he notes in great detail, this puts one on the slippery slope leading to much irrational and incoherent rant and there are very basic flaws in it. Nevertheless, it virtually took over US and European universities for several decades and is far from dead. You will also need his definition of eros from p528.

You get a terrific sampling of bad writing, confused and outdated ideas and obsolete jargon. On p52 there is a quote from Jakobson which can be replaced by `the inference engines for psychology and language develop as we mature´; and paragraphs from Jantsch (p58) which say that evolution is evolution and cells are cells and (p71) the environment changes as organisms evolve. There is a quote from Foucault to open Book Two (p327) which, translated from deconstructese, says `knowledge helps to understand the world`.

There is a long quote (p60-61) from Rupert Sheldrake which, when it is intelligible at all, says things that translate as ´proteins are proteins´ and ´cells are cells´. There are numerous linguistic disasters from Habermas (e.g., if you have time to waste, try figuring out the quotes on p77 or 150), but some are actually translatable, such as those on p153-4, which say that people have morals so society has laws and language evolved so society evolved. And lots of this from Wilber himself, as on p109 where he spends most of the page to say most mutations and recombinations fail and the surviviors are compatible with their evirons. In spite of his acquaintance with Searle´s work, he is often confused about consciousness. He says (p117-8) that we can regard whatever

we want as conscious, but clearly, once we leave the realm of animals that have eyes and a brain and walk around, it becomes a joke. Likewise, he is on very thin ice when discussing our interior and the need to interpret the minds of others. This is very far off the mark if one knows some Searle, Wittgenstein and cognitive psychology. Likwise with the `explanations´ of Wolf on p742 which are wrong for the same reasons that ´explanations´ of consciousness are wrong. It must be true that mind and spirit are based in physics (at least there is no intelligible alternative) but we don´t know how to conceptualize this or even how to recognize such a concept. Many suspect we will never understand this nor any of the fundamentals of the universe (e.g., see my reviews of Kaku´s `Hyperspace` and of Dennett).

His notes (p129) that cultural studies have made little headway but neither he nor his sources understand that they lacked any framework to do so and often because they embraced the sterile idea of the blank slate. They want to be factual, even scientific, but they constantly veer off into fantasy. He delineates the integration of art, science and morality as the great task of postmodernism and he and others go to immense lengths to make connections and organize it all into a coherent plan for thinking and living. However, I wonder if it´s really sensible or even possible. Life is not a game of chess. Even in the limited realm of art or morality it is not at all clear that there is anything other than that these are parts of human experience which draws them together. One can put paintings and sculpture and clothing and buildings and stick figures in an art book but is this really getting us anywhere? Please see my review of Hofstadter´s `Godel, Escher, Bach´ for much more on this. Boyer shows in detail how religion is due to a complex of brain systems that serve many different functions which evolved long before there was anything like religion.

The brain has numerous templates that take in data, organize it and relate it realtime to other data, but they each serve a specific purpose and those purposes are not ART, MORALITY, RELIGION, and SCIENCE.

Cognitive psychology shows that we have many modules working simultaneously to produce any behavior and that we relate to people in many

ways for many reasons. One basic function is coalitional intuition. This gives us feelings that guide our entrance into groups and our interactions with other groups. We automatically and immediately overestimate the qualities of those in our group even if it´s composed of randomly chosen total strangers we met five minutes before. Likewise, we immediately underestimate the good qualities of those in other groups. This and many other automatisms guide and commonly rule individual behavior, groups, nations and the world, but hardly anyone had a real understanding of this until quite recently. So, it is not surprising that almost all of his sources from Plato to Kant to Habermas have been wandering around in the dark and that Wilber is frantically running from one to the other with a flashlight trying to help them find their way out of the woods.

He notes (p199) that the only serious global social movement to date was Marxism but thinks its fatal flaw was reductionism. It seems far more cogent to note that, like virtually all of modern society (and most of his sources and to a significant extent this book), it denied (or ignored or failed to understand) human nature and basic biology. Nobody seems to notice that most social institutions and ideals, (including equality and democracy) have this same flaw. Debate on human nature, the environment and the future is endless, but reality is an acid that will eat through all fantasy. To paraphrase Lincoln, you can fool some of the people all of the time and all of the people some of the time but you can´t fool mother nature anytime.

He details intellectual history (philosophy, psychology, religion, ecology, feminism, sociology, etc) and shows where nearly everyone went too far in the direction of Ascent (to the spirit or religious life only) or Descent (to science, materialism, reductionism or Flatland). He trys to show how to heal the rifts by combining sense and soul (spiritual and material life, science and religion, internal and external, individual and social). Everything is related to everything else (holons in holarchies—i.e., things in nested hierarchies—see p26,135 for his definition).

The Age of Enlightenment denied the the spirit, the individual and the interior life but developed art, morals and science and led to democracy,

feminism, equality and ecology. This reductionism compressed the intellect and the spirit into the Flatland of science, rationality and materialism. He sees the loss of the spiritual point of view with the Age of Enlightenment as the major factor responsible for the malaise of modern times, but `true spirituality` or`advanced religion`--my terms--(i.e., the quest for enlightenment), as opposed to `primitive religion`(everything else-see Boyer) was always rare. It is advanced religion he sees as the panacea, but it is primitive religion that the masses understand, and it too has only materialistic goals (money, power and all else serving to replicate genes).

He understands that Jesus was a mystic in the same sense as Buddha and many others, and that what was to become the Catholic church largely destroyed his mystical aspects (personal search for enlightenment) in favor of primitive religion, priests, tithes and a structure seemingly modeled on the Roman army (p363). But, for the early Christian church, as for most religion, the cognitive templates were servants of the genes and enlightenment was not on the menu. Jesus was not a Christian, he had no bible, and he did not believe in a god any more than did Buddha. We have Christianity without the real intelligence of Jesus and this, as he explains in detail, is one cause of the West´s extended stay in Flatland. I am not a Christian nor even a theist but it is one of the saddest things in history that the enlightened master who was to serve as the model of spirituality for the West had his vision of personal enlightenment destroyed and distorted by his own followers (but of course they are not really HIS followers). See the Gnostics and the Nag Hammadi manuscripts and above all Osho's discourses on the Gospel of Thomas.

Like everyone until recently, the many authors he discusses lacked any real explanation for human behavior. It rarely occurred to them to ask why we have such ideas and behavior and the few who did had no coherent solution.

Though he has read some of John Searle´s superb philosophy, and has passing references to research in cognitive psychology, it is amazing that he could do 20 years research in philosophy without studying Wittgenstein, religion without reading Osho and watching his videos, and psychology

without Buss, Tooby, Cosmides et al. Much of cognitive and evolutionary psychology was only published in journals at the time he was writing and Wilber has almost no references to journals. But, Wittgenstein is the most famous philosopher of modern times and Osho the most famous spiritual teacher. It is remarkable that although he spends much time in his books discussing the intellectual aspects of therapy (Freud, Beck, Maslow etc) and clearly understands that the spiritual path is the ultimate therapy, he totally ignores Osho, who had the most advanced therapeutic community in history functioning worldwide for the last 30 years. Osho never wrote a thick book containing a theory of human behavior, though his 200 books and many DVD´s explain it as beautifully and clearly as has ever been done.

Though he tries hard to heal the world, Wilber spends too much time in the airy realms of intellectual debate. As a postmodernist, and holist new age mystic, he wants to unite art, morality and science, but science gets the short straw. As in some of his other books (e.g., A Brief History of Everything- see my review), by far the worst mistakes he makes (along with nearly all his sources and most of the planet) are ignoring and misunderstanding basic biology. This is apparent thoughout the book. He starts chapter 7 with a quote from Aurobindo, who had the same failing. They have no grasp of the fact that the eugenic effects of evolution are driven by natural selection and when society became firmly established, this ceased and it´s been totally dysgenic ever since. Genetic engineers have been at work and they have released on a helpless world the most horrifically destructive mutant imaginable. Society is the engineer and we are that mutant. If one gets the big picture, preoccupation with the possible destructive effects of GMOs (genetically modified organisms) -- other than ourselves-- is simply stupid and is perhaps a result of the operation of the contagion templates discussed by Boyer. That is, the potential destructive effect of all the GMOs we will ever make is unlikely to approach what humans have already done themselves.

He says (p 508, p519) that Darwin does not explain evolution, supposedly well known before him, and accuses him of `massive obscurantism´ (he should be saying this about most of his sources!). The truth is that nothing in human behavior or the world or the universe makes sense except in the light

of evolution and no person did more to make this clear than Darwin. The work before him was little more than idle speculation and did not even approach a serious scientific treatment. This is why it had NO EFFECT on science or society.

Of course, Darwin did not know genetics nor plate tectonics, and modern Neo-Darwinism adds many refinements, but it shows a total misunderstanding of science and history to say that this invalidates or diminishes his contributions. Wilber is clearly sliding sideways into the Creationist camp and one can only speculate as to which of his inference engines produce this. He shows in many places that he has a poor grasp of genetics and evolution. E.g.., on p561--as Dawkins has so patiently explained, the unit of evolution is the gene, and none of the other things Wilber mentions work as a genetic unit. Though he lists `The Selfish Gene` in his bibliography, it´s clear he has not understood it, and it´s 30 years old. Dawkins has written half a dozen superb works since and there are hundreds of others.

Wilber seems to have an allergy to good biology books--most of those he quotes are very old and others are classics of confusion. He wastes a page (p51) on the idea (mostly due to Gould and Eldredge) of punctuated evolution, which is of very little interest. Gould loved to make a big fuss about his `discoveries` and his energy got him alot of airtime, but when all was said and done, he had nothing new to say and dragged millions into his own confusions (as Dawkins, Conway Morris and many others have noted). Yes, evolution is sometimes faster but so what? Sometimes it rains a little, sometimes a lot. If you zoom in, in time or space, you always see more detail, and if you zoom out it starts to look the same. Gould was also responsible for the `spandrels of San Marcos` debacle and, with his Marxist colleagues Lewontin and Rose, for endless insipid attacks on `determinist biology`, including the scandalous verbal and physical assaults on E.O Wilson (who, unlike themselves, made numerous major contributions to biology, though he recently disgraced himself—see my review of his 'The Social Conquest of Earth'). Modern research (e.g., see Pinker and Boyer) makes it clear that Wilson was right on the money regarding evolution, except for his unfortunate recent embrace of 'group selection'.

It is quite careless to say (p775) that there is no single pregiven world. Perhaps he only means we ought to be multicultural, egalitarian etc., but if there really were none, then how can we live and communicate? This is the ugliness of postmodernism creeping in. A large dose of Wittgenstein and cognitive psychology is an appropriate cure. Neither Wilber nor Derrida nor Foucault (nor most people) understand that there MUST be a single point of view or life would be impossible. This single point of view, resident in our genes, is integral to how we think and behave and largely dictates the vagaries of philosophy, politics and religion. The cognitive templates that underlie language, thought and our perception of reality logically must be the same and the evidence for this is overwhelming. Even the smallest changes, a few genes gone wrong, and you have autism, imbecility or schizophrenia.

The brute fact that Wilber (and most of the world) largely ignores, is that there are 7 billion (11 billion by 2100) sets of selfish genes carrying out their programs to destroy the earth. They are an acid that will eat through any intellectual conclusions, egalitarian fantasies and spiritual rebirths. Selfishness, dishonesty, tribalism and shortsightedness are not due to accidents of intellectual or spiritual history. He says that the lack of spirit is destroying the earth, and though there is this aspect to things, it is much more to the point to say that it is selfish genes that are responsible. Likewise, he says `Biology is no longer Destiny`, but it is an easily defensible point of view that the reverse is far more likely. The attempt to understand history in terms of ideas ignores biology and denies human nature. Selfish genes always live in Flatland and less than 1000 people in all of human history have escaped the tyranny of the monkey mind into enlightenment.

Most of chapter 6 on myth and magic is outdated, confused or just wrong. To give just a few examples, we now understand that most of a child´s psychological and social development is built in and does not have to be learned (eg, pg 233-4). The child does not have to deconstruct anything--the inferences engines do it all (p260). Joseph Campbell is quoted extensively and he too was clueless about how we develop and how to explain the differences and similarities in cultures (p245-50). E.g., Campbell says mythology can only

lay claim to childhood, but a look around the world shows how false this is and a reading of Boyer tells why. His discussion of thinking about the nonfactual on pg 279 to 80 is now referred to as running the inference engines in decoupled mode. To his contorted comments in the middle of pg 560 (and finally....) I want to say `explanation ends with the templates! P580-4 and 591-3 are so full of dubious and plain wrong statements I don´t even want to begin but suggest that Wilber and the reader start with Searle´s `The Mystery of Consciousness`. Time and again, it is clear he shares the lack of a scientific viewpoint with most of his sources. What info or procedures can solve the questions of consciousness or of any social science and philosophical theories? How do you recognize an answer when you see it? He and they go on for pages and whole books without ever having any idea (e.g., see my review of Dennett´s Freedom Evolves).

On p702- bottom- he talks about the fulcrum driving development but if one understands templates (and I mean here and elsewhere the entire corpus of cognitive and evolutionary psychology) then one either needs to rewrite this or eliminate it. Ditto for most of pgs 770-77. The tortured prose on pg 771-2 is only saying that the templates are probed by drugs or other input but not changed and that nobody knows (in a way they can clearly convey) what these are. The background or intersubjective worldspace is the templates and they develop very early in children and then stay fixed for life. The deliberate destruction of Jesus` mysticism has created a powerful bias against higher consciousness in the West. Though he does not understand or discuss enlightenment, Boyer gives the basis for understanding how and why this happened.

Wilber embraces a simple utilitarianism (greatest good for greatest number)—i.e., the greatest depth for the greatest span (p334). This basic principle of much philosophy, religion and economics has serious problems and is probably unworkable. Which people should we make happy and how happy and when (i.e., now or in the future)? On what basis do we distribute resources now and how much do we save for the future population, and who decides and how to enforce this? He calls upon our Basic Moral Intuition (ie, the operation of our templates, as we now know), but our BMI is not really to

help others but to help ourselves, and the few thousand (or let´s be very optomistic and say few million) who are spritually advanced do not run the world and never will. The BMI-- eg, social exchange, coalitional intuitions, intuitive psychology, etc., evolved to serve our own interests (not those of the group--if, like Wilber, you think this way please read some of Dawkins' books or my recent review of Wilson's 'The Social Conquest of Earth' in this volume) and in any case is hopelessly at sea in the modern world with it´s advanced education, instant communications, firearms, mood altering drugs, clothes and cosmetics, a huge and mobile population and vanishing resources.

Instead of the intellectual or spiritual approach Wilber takes to history, others take ecological, genetic or technological approaches (e.g., Diamond's ´Guns, Germs and Steel´ or Pinker's ´The Blank Slate´). In the long run, it appears that only biology really matters and we see daily how overpopulation is overwhelming all attempts to civilize the masses. The democracy and equality which Wilber values so highly are means created by selfish genes to facilitate their destruction of the planet. In spite of the hope that a new age is dawning and we will see the biological and psychic evolution of a new human, the fact is that we are the most degenerate species there ever was and the planet is nearing collapse. The billions of years of eugenics (natural selection) that thrust life up out of the slime and gave us the amazing ability to write and read books like this is now over. There is no longer selection for the healthier and more intelligent and in fact they produce a smaller percentage of the children every year. Nature does not tolerate physical and mental aberrations but society encourages them. Our physical and mental peak was probably CroMagnon man or maybe even Neanderthals (who had larger brains-yes, I know they seem not to have been our ancestors for more than a few % of our DNA) about 100,000 years ago. It seems plausible that only genetic engineering and an enlightened oligarchy can save us.

He thinks (e.g., p12 etc.) that it is our fractured world view (i.e., denial of the spirit) that is responsible for our ecological catastrophes and preoccupation with material goods but this is another example of the denial of human nature. Nobody views heart conditions or Alzheimer disease as due to a fractured world view, but few seem to have any problem thinking you can

change the fundamentals of behavior just by education or psychological manipulation. Modern science refutes this view conclusively (see Pinker, Boyer etc.). The intuitive psychology templates tell us that we can manipulate the behavior of others, but these templates were evolved hundreds of thousands of years ago, and they often fail to give correct results in modern contexts. Nearly every parent thinks they can profoundly influence the adult character (patience, honesty, irritability, depression, persistence, compulsiveness etc.) of their children in spite of clear evidence to the contrary (e.g., Pinker).

He thinks that animal rights people are illogical and excessive when they value animals over humans and likewise with those who value the environment over people´s needs. This may be logical in his system but of course humans are typically (and often reasonably) illogical. In any case, if we always put human needs first, then it is surely the end of peace, tranquility, beauty and sanity.

Wilber defends Piaget, but like him he shows many places that he does not understand that the child does not have to learn the important things--they are built in and it only has to grow up. There seems to be no evidence that any of our templates change with time. The things that we learn are mostly trivial in comparison (ie, even a computer can learn them!).

His sources are mostly lost in confusion and jargon but he is brilliant and if one bothers to read his explanations and translate Wilberspeak into English, it usually makes sense. On pg 545- 7 he explains holonic ecology. Here is a translation. All organisms have value in themselves and are related to all others in the ecosystem and we must wake up spiritually. There is a web of life (i.e., Gaia or ecosystem) and all have intrinsic value but higher organisms have more value, which requires a spiritual point of view. Neither the spiritual or scientific approach works alone (ie, dualism is bad).

Translated, it loses most of it´s appeal but it is not fair to deny the poetry and majesty of his vision. But, this does not excuse him from writing clearly. Opacity is a nearly universal characteristic of the books he treats here.

However, when Katz wrote a book denigrating mysticism Wilber took the time to do a `Searleian` analysis to show how incoherence has passed for scholarship (p629-31). Unfortunately, he does not continue this throughout the book and uses the jargon-laden incoherence of Habermas and others to explain other vague or incoherent texts (e.g., using Habermas instead of Searle or Wittgenstein or cognitive psychology to explicate Emerson p633).

In the USA, some 120 million (about 250 million by 2100) third world refugees from unrestrained motherhood are now the most powerful single force for destruction, having easily displaced fundamentalist European Christians. But all low-class people are united in being against (or at least unwilling/unable to practice) population control and for environmental devastation in order to maximize the number of and resource use by their genes (though lacking any insight into this of course). This was a rational survival strategy when it was fixed in the genes millions of years ago, but it is suicidal now. The spiritual rebirth he talks about is not that of the "diverse" or the lower classes anywhere.

His view is that it is the poor and ignorant who are the major environmental problem and that this is somehow due to our Flatland approach, so if we just wake up, get spiritual and help them out this will solve it. However, the rich destroy as much as 20 times more than the poor per capita and the third world will pass the first in C02 production about 2025. But there is nothing noble about the poor—they are only the rich in waiting.

Everyone is part of the problem and if one does the math (vanishing resources divided by increasing population) it's clear that the worldwide collapse of industrial society and a drastic reduction in population will happen and it's only a matter of how and when (2150 is a good guess). Like so many, he suggests living lightly on the earth, but to live (and above all, to reproduce), is to do harm and if reproduction remains a right then it's hard to see any hope for the future. As is politically correct, he emphasizes rights and says little about responsibilities. It is a reasonable view that if society is to accept anyone as human, they must take responsibility for the world and this must take precedence over their personal needs. It is unlikely that any government

will implement this, and equally unlikely that the world will continue to be a place any civilized person will wish to live in (or be able to).

Those wishing a comprehensive up to date account of the analysis of 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 (2016). I reproduce the table of intentionality from it here.

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)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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

The most profound spiritual autobiography of all time? - a review of "The Knee of Listening" by Adi Da (Franklin Jones) (1995)

Michael Starks

ABSTRACT

A brief review of the life and spiritual autobiography of the unique American mystic Adi Da (Franklin Jones). The sticker on the cover of some editions says `The most profound spiritual autobiography of all time` and this might well be true. I am in my 70´s and have read many books by spiritual teachers and on spirituality, and this is one of the greatest. Certainly, it is by far the fullest and clearest account of the process of enlightenment I have ever seen. Even if you have no interest at all in the most fascinating of all human psychological processes, it is an amazing document that reveals a great deal about religion, yoga, and human psychology and probes the depths and limits of human possibilities. I describe it in some detail and compare his teaching with that of the Indian mystic Osho.

Those wishing a comprehensive up to date framework for human behavior from the modern two systems view may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017). Those interested in my writings with more socio-political content may see Suicidal Utopian Delusions-Articles and Reviews 2006-2017'(2017).

There are many editions of the spiritual autobiography of the unique American mystic Adi Da (Franklin Jones). The first edition was 1972 and new editions with more material and much advertising about the group continue to appear. The latest one I have seen (2004) is about 3 times the size and weight of the 1995 edition I prefer, as the hundreds of pages of new material are more of the opaque prose and advertising. So, I recommend one of the earlier paperback editions such as the 1995 one to which my page citations refer.

A brief review of the life and spiritual autobiography of the unique American mystic Adi Da (Franklin Jones). The sticker on the cover of some editions says `The most profound spiritual autobiography of all time` and this might well be true. I am in my 70´s and have read many books by spiritual teachers and on spirituality, and this is one of the greatest ones. Certainly, it is by far the fullest and clearest account of the process of enlightenment I have ever seen. Even if you have no interest at all in the most fascinating of all human psychological processes, it is an amazing document that reveals a great deal about religion, yoga, and human psychology and probes the depths and limits of human possibilities.

As I have read and experienced a lot in various religious traditions, I naturally compare his writings with those of others, particularly with the great Indian mystic Osho. Though they clearly agree on the major points of how to proceed on the path, letting go of the attachment to the spiritual quest etc, their styles are vastly different. Both are highly intelligent and well read (Osho could speed read and read a huge number of books) and were at home in the spiritual literature of the major religious traditions. However, like so much of the spiritual literature, most of Da´s books are essentially unreadable as he struggles to express in language the ineffable realms of the enlightened mind. Even in this, by far his most readable book, he often veers off into pages of opacity as he tries to explain the unexplainable. A great pity he seems never to have read Wittgenstein –the greatest natural psychologist of all time—who showed that we must abandon the attempts at explanation and accept descriptions of our innate psychological functions in language, which is the mind.

Osho by contrast is the clearest, most jargon free expositor of the spiritual life who has ever lived. He wrote very little and nearly all of his more than 200 books are transcriptions of spontaneous talks he gave-- with no notes or preparation. They are nonetheless unexcelled masterpieces of spiritual literature. His amazing àutobiography` (actually compiled after his death) has been published by St. Martins and the full version, as well as all his books (many also available on DVD), are available online many places.

Unfortunately, he has very little to say about the exact details of his spiritual progress.

As Da lived most of his later life in seclusion on an island in Fiji it was not easy to get to hear him but the Dawn Horse Press sells a few videotapes on their web page. Da is not a very engaging or facile speaker, unlike Osho who is by turns amusing, shattering and hypnotic. But, as both of them understand, it´s what the master is and not he says that is important.

Both of them were utterly honest and uncompromising in their life and teachings and Da omits nothing of relevance, including his youthful adventures with sex and drugs as well as his exposure to LSD, psilocybin and mescaline as a volunteer in government experiments. However, as with many or perhaps all of those destined to become enlightened, he was different from birth and experienced the Shakti energy (which he calls the Bright) from childhood. And, when he entered college, he said his primary interest was to discover what living beings are and what is living consciousness. Clearly not your typical freshman.

A major problem in describing advanced spiritual states is that no criteria or language for them exists in common discourse so mystics have to try to bend language in mostly vain attempts to capture their experiences. It is far worse than trying to describe seeing to a congenitally blind person since they at least have the cognitive structures and experience of the world. But mystics are quite rare and most of them have left little or no description of their mental states.

Unlike Osho, who rejected miracles, paranormal phenomena and all the other nonsense that commonly accompanies religion, Da seems to lack any science background at all and embraces precognition (p120), reincarnation (p555),`meditating` other persons, living on air (p287) etc., and regards the phenomena that I would say are happening in his brain as being `out there`. From comments included in newer editions it is clear that many of his disciples believe he can perform miracles like stopping a raging forest fire at their California retreat. Nevertheless, most of the time he is amazingly

levelheaded, going thru over a decade of stress and psychic terrors that would drive most from the spiritual path. Millions of years of evolution have solidified the ego and it does not leave peacefully.

Interwoven with the spellbinding account of his spiritual progress are the details of the mind's interaction with the body, described in the East in terms of various forms of Yoga (eg., p95-9, 214-21, 249,281-3, 439-40 in the 1995 edition I recommend). These few pages are worth more than a whole shelf of yoga books if you want to get to the heart of the mind/body relation in spirituality.

Unlike most who have become enlightened, he had a thorough grounding in Christian practice and made a major effort to become a protestant, and then Greek Orthodox minister. Even years later, after he was far along the path with Muktananda, he had an amazing and totally unexpected series of visitations from Mary and Jesus that went on for weeks (p 301-3 et seq.).
Regarding drugs, as is nearly universal among spiritual teachers, he notes that although they may remove certain barriers at times, they do not provide a shortcut to understanding. However, nearly everyone is now aware that they put many on the path to higher consciousness throughout human history, especially in the last few decades.

He describes in detail the many stages in his ego death or self-realization (e.g., p72-4, 198-200, 219,20, 238-9, 245, 249, 258-9, 281, 355-65, 368-72, 406). Along the way, he realized the ultimate disutility of all practices and all traditions (337-9) including yoga (281-3), which are all attached to seeking and goals, ultimately winding up in the present. He discovered, as have many others, that seeking and meditation became obstacles and gave them up for devotion to his guru Muktananda (p420-22). His detailed accounts of his interactions with the famous Swami Muktananda and his ultimate realization of his limitations are of rare insight and honesty. He constantly encounters his attachment to his ego (Narcissus—e.g., p108-110) and asks himself--`Avoiding Relationship? ` by which he seems to mean avoiding the divine or ego death by preoccupation with spiritual seeking.

After enlightenment, he teaches the ´only by me revealed and given Way of the heart`, finding all other paths to be `remedial` and ´egoic´ and merely pursuing God or reality (p359 +), but after a careful reading of this and several other books I never got any idea what that way consists in. Undoubtedly being in his presence helps a lot but in other places he has complained about the fact that his disciples just won´t let it happen and one wonders if even one has been able to follow him. Of course, the same considerations apply to all traditions and teachers and though some of Osho´s friends (he disavowed the master/disciple relationship) have claimed enlightenment, nobody of his status has emerged. It looks like you have to have the right genes and the right environment and a very advanced and preferably enlightened guru to stimulate you. I suspect that the time has passed when an enlightened one could start a movement that transforms much of the world. The world desperately needs higher consciousness and I hope that someone comes up with an easier way very soon, but I think it's quite unlikely.

Do our automated unconscious behaviors reveal our real selves and hidden truths about the universe? -- A review of David Hawkins 'Power vs Force--the hidden determinants of human behavior –author's official authoritative edition' 412p (2012) (original edition 1995).

Michael Starks

ABSTRACT

I am very used to strange books and special people but Hawkins stands out due to his use of a simple technique for testing muscle tension as a key to the "truth" of any kind of statement whatsoever—i.e., not just to whether the person being tested believes it, but whether it is really true! What is well known is that people will show automatic, unconscious physiological and psychological responses to just about anything they are exposed to—images, sounds, touch, odors, ideas, people. So, muscle reading to find out their true feelings is not radical at all, unlike using it as a dousing stick (more muscle reading) to do "paranormal science".

Hawkins describes the use of decreasing tension in the muscles of an arm in response to increases in cognitive load thus causing the arm to drop in response to the constant pressure of someone's fingers. He seems unaware that there is a long established and vast ongoing research effort in social psychology referred to by such phrases as 'implicit cognition', 'automaticity' etc., and that his use of 'kinesiology' is one tiny section. In addition to muscle tone (infrequently used) social psychologists measure EEG, galvanic skin response and most frequently verbal responses to words, sentences, images or situations at times varying from seconds to months after the stimulus. Many, such as Bargh and Wegner, take the results to mean we are automatons who learn and act largely without awareness via S1 (automated System 1) and many others such as Kihlstrom and Shanks say these studies are flawed and we are creatures of S2 (deliberative System 2). Though Hawkins seems

to have no idea, as in other areas of the descriptive psychology of higher order thought, the situation regarding "automaticity" is still as chaotic as it was when Wittgenstein described the reasons for the sterility and barrenness of psychology in the 30's. Nevertheless, this book is an easy read and some therapists and spiritual teachers may find it of use.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Wittgenstein and Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

I am very used to strange books and special people but Hawkins stands out due to his use of a simple technique for testing muscle tension as a key to the "truth" of any kind of statement whatsoever—i.e., not just to whether the person being tested believes it but, whether it is really true! How could any sane person believe this? As a person with over 50 years adult experience with science, psychology, philosophy, religion and life I do not find it at all credible that it is even highly reliable about the person's beliefs and there is no chance of getting to know reality this way. What is well known is that people will show automatic, unconscious physiological and psychological responses to just about anything they are exposed to—images, sounds, touch, odors, ideas, people. So, muscle reading to find out their true feelings is not radical at all, unlike using it as a dousing stick (more muscle reading) to do "paranormal science".

Kinesiology, also known as human kinetics, is the study of human movement. Kinesiology studies physiological, mechanical (muscle tone), and psychological mechanisms as indices of people's mental and physical status and often uses movement exercises as therapy. However, Hawkins (without saying so) is using the term to refer to a very narrow application of kinesiology—the use of decreasing tension in the muscles of an arm in response to increases in cognitive load (i.e., mention of some person, event or object), which causes the subject to be distracted by intellectual or emotional

issues, thus decreasing the muscle tension and causing the arm to drop in response to the constant pressure of someone's fingers. Hawkins seems unaware that there is a long established and vast ongoing research effort in social psychology referred to by such phrases as 'implicit cognition', 'automaticity' etc., and that his use of 'kinesiology' is one tiny section. In addition to muscle tone (actually infrequently used) social psychologists measure EEG, galvanic skin response and most frequently verbal responses to words, sentences, images or situations at times varying from seconds to months after the stimulus.

It was just by chance that I read Hawkins book after reading several books and dozens of recent papers on implicit cognition and was greatly surprised that he uses it as a key to the universe--i.e., the 'ultimate nature of reality' and I am sure the hundreds of active researchers would be equally amazed. I relate his spiritual practice to contemporary work on implicit cognition.

A major issue in most contemporary research on implicit social cognition is the degree to which it is automatic ('unconscious') and what constitutes 'evidence' for this. Hundreds of papers and dozens of books have appeared in just the last few years with massive confusion and often acrimonious debates. Many, such as Bargh and Wegner, take the results to mean we are automatons who learn and act largely without awareness via S1 and many others such as Kihlstrom and Shanks say these studies are flawed and we are creatures of S2.

Though Hawkins seems to have no idea, as in other areas of the descriptive psychology of higher order thought, the situation regarding "automaticity" is still as chaotic as it was when Wittgenstein described the reasons for the sterility and barrenness of psychology in the 30's.

Often the issue is stated by researchers and philosophers in terms of System 1 and System 2 functioning --a very useful, even indispensable division of behavior (intentionality) into our primitive reptilian automated, nonreflective S1 and our higher cortical primate conscious deliberative

functions of S2. As noted in my other reviews, this division was pioneered by philosopher Ludwig Wittgenstein in the 1930's, though nobody has realized it.

I am quite familiar with mediation and the phenomena of enlightenment (see my review of Adi Da's autobiography 'The Knee of Listening') and am willing to accept Hawkins' claim to be in this rarefied group (it is often said that we know of less than 1000 enlightened persons in all of human history). I can also accept that he may have been a very effective 'therapist' who helped many persons and clearly, he is highly intelligent. This does not make me accept his many questionable or clearly false statements about the facts of the world. I am also (on the basis of a lifetime of study of science and philosophy) very skeptical about the relevance of chaos, attractors, complexity theory, computation, etc. to the study of human behavior (see my many book reviews here and on academia.edu, philpapers.org, researchgate.net, vixra.org, Amazon etc.), claims which are often made by scientists as well. I hope to review various books on implicit cognition, so will not go into it here except to say that it involves the usual horrific mixing of factual true or false scientific issues about causal brain functions (the S1 mind), with those about how language works (i.e., the mind, which as Wittgenstein showed us ¾ of a century ago, is public behavior --the S2 mind)—other topics I have covered extensively in my reviews.

So, Hawkins makes much of his muscle reading and I'm sure it often works well but there is a major logical error here. Regardless of what it says about the beliefs of the person being tested, it clearly says nothing whatever about the world itself. So, I respect Hawkins and his therapeutic work but, with the vast array of approaches to spiritual and emotional healing there are lots of choices. And it is one thing to be treated by an enlightened master-whose very presence (or even the thought of them) can be galvanizing, and quite another to be treated by an ordinary person. By far the best source of books, audios and videos of an enlightened master at work are those of Osho (Bhagwan Shree Rajneesh) which are available to buy or free on the net. He therapized thousands at a time on occasion and created the most remarkable therapeutic community of all time around him. Though he is gone, his therapists still

practice worldwide and his works can be transformative.

Hawkins has other books which have many favorable reviews so those deeply interested may consult them.

BIOLOGY

Altruism, Jesus and the End of the World—how the Templeton Foundation bought a Harvard Professorship and attacked Evolution, Rationality and Civilization. A review of E.O. Wilson 'The Social Conquest of Earth' (2012) and Nowak and Highfield 'SuperCooperators'(2012)

Michael Starks

ABSTRACT

Famous ant-man E.O. Wilson has always been one of my heroes --not only an outstanding biologist, but one of the tiny and vanishing minority of intellectuals who at least dares to hint at the truth about our nature that others fail to grasp, or insofar as they do grasp, studiously avoid for political expedience. Sadly, he is ending his long career in a most sordid fashion as a party to an ignorant and arrogant attack on science motivated at least in part by religious fervor. It shows the vile consequences when universities accept money from religious groups, science journals are so awed by big names that they avoid proper peer review, and when egos are permitted to get out of control. It takes us into the nature of evolution, the basics of scientific methodology, how math relates to science, what constitutes a theory, and even what attitudes to religion and generosity are appropriate as we inexorably approach the collapse of industrial civilization.

Those wishing a comprehensive up to date framework for human behavior from the modern two systems view may consult my book 'The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle' (2017). Those interested in more of my writings may see 'Talking Monkeys--Philosophy, Psychology, Science, Religion and Politics on a Doomed Planet--Articles and Reviews 2006-2017' (2017).

Famous ant-man E.O. Wilson has always been one of my heroes--not only an outstanding biologist, but one of the tiny and vanishing minority of intellectuals who at least dares to hint at the truth about our nature that others fail to grasp, or insofar as they do grasp, studiously avoid for of political expedience. Sadly, he is ending his long career in a most sordid fashion as a party to an ignorant and arrogant attack on science motivated at least in part

by religious fervor. It shows the vile consequences when universities accept money from religious groups, science journals are so awed by big names that they avoid proper peer review, and when egos are permitted to get out of control. It takes us into the nature of evolution, the basics of scientific methodology, how math relates to science, what constitutes a theory, and even what attitudes to religion and generosity are appropriate as we inexorably approach the collapse of industrial civilization.

I found sections in 'Conquest' with the usual incisive commentary (though nothing really new or interesting if you have read his other works and are up on biology in general) in the often-stilted prose that is his hallmark, but was quite surprised that the core of the book is his rejection of inclusive fitness (which has been a mainstay of evolutionary biology for over 50 years) in favor of group selection. One assumes that coming from him and with the articles he refers to published by himself and Harvard mathematics colleague Nowak in major peer reviewed journals like Nature, it must be a substantial advance, in spite of the fact that I knew group selection was nearly universally rejected as having any major role in evolution.

I have read numerous reviews on the net and many have good comments but the one I most wanted to see was that by renowned science writer and evolutionary biologist Richard Dawkins. Unlike most by professionals, which are in journals only available to those with access to a university, it is readily available on the net, though apparently, he decided not to publish it in a journal as it is suitably scathing.

Sadly, one finds a devastating rejection of the book and the most acerbic commentary on a scientific colleague I have ever seen from Dawkins--exceeding anything in his many exchanges with late and unlamented demagogue and pseudoscientist Stephan Jay Gould. Although Gould was infamous for his personal attacks on his Harvard colleague Wilson, Dawkins notes that much of 'Conquest' reminds one uncomfortably of Gould's frequent lapses into "bland, unfocussed ecumenicalism". The same is more or less true of all Wilson's popular writing including his most recent book 'The Meaning of Human Existence'—another shameless self-promotion of his discredited ideas on Inclusive Fitness (IF).

Dawkins points out that the notorious 2010 paper by Nowak, Tarnita and Wilson in Nature was almost universally rejected by over 140 biologists who responded with letters and that there is not one word about this in Wilson's book. Nor have they corrected this in the subsequent 4 years of articles,

lectures and several books. There is no choice but to agree with Dawkin's trenchant comment "For Wilson not to acknowledge that he speaks for himself against the great majority of his professional colleagues is--it pains me to say this of a lifelong hero --an act of wanton arrogance." In view of Nowak's subsequent behavior one must include him as well. I feel like one of the stunned people one sees on TV being interviewed after the nice man next door, who has been babysitting everyone's children for 30 years, is exposed as a serial killer.

Dawkins also points out (as he and others have done for many years) that inclusive fitness is entailed by (i.e., logically follows from) neo- Darwinism and cannot be rejected without rejecting evolution itself. Wilson again reminds us of Gould, who denounced creationists from one side of his mouth while giving them comfort by spewing endless ultraliberal Marxist-tinged gibberish about spandrels, punctuated equilibrium and evolutionary psychology from the other. The vagueness and mathematical opacity (to most of us) of the mathematics of group or multilevel selection is just what the soft-minded want to enable them to escape rational thinking in their endless antiscientific rants, and (in academia) postmodernist word salads.

Worse yet, Wilson's 'Conquest' is a poorly thought out and sloppily written mess full of nonsequiturs, vague ramblings, confusions and incoherence. A good review that details some of these is that by graduate student Gerry Carter which you can find on the net. Wilson is also out of touch with our current understanding of evolutionary psychology (EP) (see e.g., the last 300 pages of Pinker's 'The Better Angels of our Nature'). If you want a serious book length account of social evolution and some relevant EP from a by an expert see Principles of Social Evolution by Andrew F.G. Bourke, or a not quite so serious and admittedly flawed and rambling account but a must read nevertheless by Robert Trivers--The Folly of Fools: The Logic of Deceit and Self-Deception in Human Life and older but still current and penetrating works such as The Evolution of Cooperation: Revised Edition by Robert Axelrod and The Biology of Moral Systems by Richard Alexander.

After reading this book and its reviews, I dug into some of the scientific articles which responded to Nowak and Wilson and to Van Veelen's critiques of the Price equation upon which they heavily relied. The reviews noted that it has always been clear that the math of group or multilevel selection reduces to that of inclusive fitness (kin selection) and that it is not logically possible to select for behavior that does not benefit the genes that are unique to the actor and its immediate relatives. To put it bluntly, 'altruistic' behavior is always selfish in the end in the sense that it increases survival of the genes in the

altruist. This to me is obvious from daily life and any scientists who claim otherwise have clearly lost their way. Yes, it does happen in the weirdness of modern life (i.e., so unlike the stone age society in which we evolved) that one sometimes sees a person give their life to protect a nonrelated person, but clearly, they will not do it again and (provided its done before they replicate) any tendency to do it will not be inherited either. Even if they have already replicated they will on average leave behind fewer descendants than if they held back. This guarantees that any genetic tendency for 'true altruism'- i.e., behavior that decreases one's genes in the population-- will be selected against and no more than this very basic logic is needed to grasp evolution by natural selection, kin selection and inclusive fitness—all the mathematical niceties serving only to quantitate things and to clarify strange living arrangements in some of our relatives (e.g., ants, termites and mole rats).

The major focus of the group selectionist's ('groupies') attack was the famous Extended Price Equation that has been used to model inclusive fitness, published by Price about 40 years ago. The best papers debunking these attacks that I have found are those of Frank and Bourke and I will start with a few quotes from Frank 'Natural selection. IV. The Price equation' J. EVOL. BIOL. 25 (2012) 1002–1019.

'The critics confuse the distinct roles of general abstract theory and concrete dynamical models for particular cases. The enduring power of the Price equation arises from the discovery of essential invariances in natural selection. For example, kin selection theory expresses biological problems in terms of relatedness coefficients. Relatedness measures the association between social partners. The proper measure of relatedness identifies distinct biological scenarios with the same (invariant) evolutionary outcome. Invariance relations provide the deepest insights of scientific thought…Essentially, all modern discussions of multilevel selection and group selection derive from Price (1972a), as developed by Hamilton (1975). Price and Hamilton noted that the Price equation can be expanded recursively to represent nested levels of analysis, for example individuals living in groups… All modern conceptual insights about group selection derive from Price's recursive expansion of his abstract expression of selection… A criticism of these Price equation applications is a criticism of the central approach of evolutionary quantitative genetics. Such criticisms may be valid for certain applications, but they must be evaluated in the broader context of quantitative genetics theory…[and in a quote from Price … 'Gene frequency change is the basic event in biological evolution. The following equation…which gives frequency change under selection from one generation to the next for a single gene or for any linear function of any

number of genes at any number of loci, holds for any sort of dominance or epistasis, for sexual or asexual reproduction, for random or nonrandom mating, for diploid, haploid or polyploid species, and even for imaginary species with more than two sexes'…]… Path (contextual) analysis follows as a natural extension of the Price equation, in which one makes specific models of fitness expressed by regression. It does not make sense to discuss the Price equation and path analysis as alternatives… Critiques of the Price equation rarely distinguish the costs and benefits of particular assumptions in relation to particular goals. I use van Veelen's recent series of papers as a proxy for those critiques. That series repeats some of the common misunderstandings and adds some new ones.

Nowak recently repeated van Veelen's critique as the basis for his commentary on the Price equation (van Veelen, 2005; Nowak et al., 2010; van Veelen et al., 2010; Nowak& Highfield, 2011; van Veelen, 2011; van Veelen et al., 2012… This quote from van Veelen et al. (2012) demonstrates an interesting approach to scholarship. They first cite Frank as stating that dynamic insufficiency is a drawback of the Price equation. They then disagree with that point of view and present as their own interpretation an argument that is nearly identical in concept and phrasing to my own statement in the very paper that they cited as the foundation for their disagreement… The recursive form of the full Price equation provides the foundation for all modern studies of group selection and multilevel analysis. The Price equation helped in discovering those various connections, although there are many other ways in which to derive the same relations… Kin selection theory derives much of its power by identifying an invariant informational quantity sufficient to unify a wide variety of seemingly disparate processes (Frank, 1998, Chapter 6). The interpretation of kin selection as an informational invariance has not been fully developed and remains an open problem. Invariances provide the foundation of scientific understanding: 'It is only slightly overstating the case to say that physics is the study of symmetry' (Anderson, 1972). Invariance and symmetry mean the same thing (Weyl, 1983). Feynman (1967) emphasized that invariance is The Character of Physical Law. The commonly observed patterns of probability can be unified by the study of invariance and its association with measurement (Frank & Smith, 2010, 2011). There has been little effort in biology to pursue similar understanding of invariance and measurement (Frank, 2011; Houle et al.,2011).'

I hope it is becoming clear why I chose the title I did for this article. To attack the Price equation and inclusive fitness is to attack not only quantitative genetics and evolution by natural selection, but the universally used concepts

of covariance, invariance and symmetry, which are basic to science and to rationality. Furthermore, the clearly voiced religious motivation of Nowak invites us to consider to what extent such Christian virtues as true (permanently genetically self-diminishing) altruism and the brotherhood of man (woman, child, dog etc.) can be part of a rational program for survival in the near future. My take is that true altruism is a luxury for those who don't mind being evolutionary dead ends and that even in it's 'make believe' inclusive fitness version, one will be hard pressed to find it when the wolf is at the door (i.e., the likely universal scenario for the 12 billion in the next century).

There is much more in this gem, which goes into exquisite logical and mathematical detail (and likewise his many other papers-you can get all 7 in this series in one pdf) but this will give the flavor. Another amusing episode concerns tautology in math. Frank again: 'Nowak & Highfield (2011) and van Veelen et al. (2012) believe their arguments demonstrate that the Price equation is true in the same trivial sense, and they call that trivial type of truth a mathematical tautology. Interestingly, magazines, online articles and the scientific literature have for several years been using the phrase mathematical tautology for the Price equation, although Nowak & Highfield (2011) and van Veelen et al. (2012) do not provide citations to previous literature. As far as I know, the first description of the Price equation as a mathematical tautology was in the study of Frank (1995).'

Unlike Frank, Lamm and others, the 'groupies' have not shown any understanding of the philosophy of science (the descriptive psychology of higher order thought, as I like to call it) in these recent books and articles, nor in any of Wilson's numerous popular books and articles over the last half century, so I would not expect them to have studied Wittgenstein (the most penetrating philosopher of mathematics) who famously remarked that in math 'everything is syntax, nothing is semantics'. Wittgenstein exposes a nearly universal misunderstanding of the role of math in science. All math (and logic) is a tautology that has no meaning or use until it is connected to our life with words. Every equation is a tautology until numbers and words and the system of conventions we call evolutionary psychology are employed. Amazingly Lamm in his recent excellent article 'A Gentle Introduction to The Price Equation' (2011) notes this:

'The Price equation deals with any selection process. Indeed, we can define selection using it. It says nothing in particular about biological or genetic evolution, and is not tied to any particular biological scenario. This gives it immense power, but also means that it is quite possible to apply it incorrectly

to the real world. This leads us to the second and final observation. The Price equation is analytic [true by definition or tautologous]. It is not a synthetic proposition [an empirical issue as to its truth or falsity]. We derived it based on straightforward definitions, and universal mathematical principles. The equation simply provides a useful way of interpreting the meaning of the straightforward definitions we started from. This however is not the case once you put the equation into words, thereby interpreting the mathematical relationships. If you merely say: _I define 'selection' to be the covariance blah blah blah, you might be safe. If you say: _the covariance blah blah blah is selection, you are making a claim with empirical content. More fundamentally, the belief that the rules of probability theory and statistics, or any other mathematical manipulation, describe the actual world is synthetic.'

In this regard, also recommended is Helantera and Uller's 'The Price Equation and Extended Inheritance' Philos Theor Biol (2010) 2: e101. 'Here we use the Price Equation as a starting point for a discussion of the differences between four recently proposed categories of inheritance systems; genetic, epigenetic, behavioral and symbolic. Specifically, we address how the components of the Price Equation encompass different non-genetic systems of inheritance in an attempt to clarify how the different systems are conceptually related. We conclude that the four classes of inheritance systems do not form distinct clusters with respect to their effect on the rate and direction of phenotypic change from one generation to the next in the absence or presence of selection. Instead, our analyses suggest that different inheritance systems can share features that are conceptually very similar, but that their implications for adaptive evolution nevertheless differ substantially as a result of differences in their ability to couple selection and inheritance.'

So, it should be clear that there is no such thing as sidestepping the Price equation and that like any equation, it has limitless applications if one only connects it to the world with suitable words.

As Andy Gardner put it in his article on Price (Current Biology 18#5 R198). Also see his 'Adaptation and Inclusive Fitness' Current Biology 23, R577–R584, July 8, 2013

'Such ideas were rather confused until Price, and later Hamilton, showed that the Price equation can be expanded to encompass multiple levels of selection acting simultaneously (Box 2). This allows selection at the various levels to be explicitly defined and separated, and provides the formal basis of group

selection theory. Importantly, it allows the quantification of these separate forces and yields precise predictions for when group-beneficial behavior will be favoured. It turns out that these predictions are always consistent with Hamilton's rule, $rb - c > 0$.

Furthermore, because kin selection and group selection theory are both based upon the same Price equation, it is easy to show that the two approaches are mathematically exactly equivalent, and are simply alternative ways of carving up the total selection operating upon the social character. Irrespective of the approach taken, individual organisms are expected to maximize their inclusive fitness — though this result follows more easily from a kin selection analysis, as it makes the key element of relatedness more explicit.'

Consequently, to have the 'groupies' attacking the Price is bizarre. And here is Bourke's recent summary of inclusive fitness vs 'groupism': (haplodiploid and eusocial refer to the social insects which provide some of the best tests).

'Recent critiques have questioned the validity of the leading theory for explaining social evolution and eusociality, namely inclusive fitness (kin selection) theory. I review recent and past literature to argue that these critiques do not succeed. Inclusive fitness theory has added fundamental insights to natural selection theory. These are the realization that selection on a gene for social behaviour depends on its effects on co-bearers, the explanation of social behaviours as unalike as altruism and selfishness using the same underlying parameters, and the explanation of within-group conflict in terms of non-coinciding inclusive fitness optima. A proposed alternative theory for eusocial evolution assumes mistakenly that workers' interests are subordinate to the queen's, contains no new elements and fails to make novel predictions. The haplodiploidy hypothesis has yet to be rigorously tested and positive relatedness within diploid eusocial societies supports inclusive fitness theory. The theory has made unique, falsifiable predictions that have been confirmed, and its evidence base is extensive and robust. Hence, inclusive fitness theory deserves to keep its position as the leading theory for social evolution.'

However inclusive fitness (especially via the Extended Price Equation) explains much more than ant society, it explains how multicellular organisms came into being.

'The third insight of inclusive fitness theory is the demonstration that conflict between members of a society is potentially present if they are unequally related to group offspring, since differential relatedness leads to unequal inclusive fitness optima. From this has sprung an understanding of an immense range of kin-selected conflicts, including conflicts within families and eusocial societies and intragenomic conflicts that follow the same underlying logic. The corollary of this insight is that societies are stable to the extent that the inclusive fitness optima of their members coincide. This in turn provides the rationale for the entire 'major transitions' view of evolution, whereby the origin of novel types of group in the history of life (e.g. genomes within cells, multicellular organisms and eusocial societies) can be explained as the result of their previously independent constituent units achieving a coincidence of inclusive fitness optima through grouping. From this standpoint, a multicellular organism is a eusocial society of cells in which the members of the society happen to be physically stuck together; the more fundamental glue, however, is the clonal relatedness that (barring mutations) gives each somatic cell within the organism a common interest in promoting the production of gametes…Nowak et al. argued that their perspective assumes a 'gene-centred approach' that 'makes inclusive fitness theory unnecessary'. This is puzzling, because entirely lacking from their perspective is the idea, which underpins each of inclusive fitness theory's insights, of the gene as a self-promoting strategist whose evolutionary interests are conditional on the kin class in which it resides…In their model of the evolution of eusociality, Nowak et al. deduced that the problem of altruism is illusory. They wrote that 'There is no paradoxical altruism that needs to be explained' because they assumed that potential workers (daughters of a colony-founding female or queen) are 'not independent agents' but rather can be seen 'as "robots" that are built by the queen' or the 'extrasomatic projection of [the queen's] personal genome'. If this claim were correct, then only the queen's interests would need to be addressed and one could conclude that worker altruism is more apparent than real. But it is incorrect, for two reasons. One is that, as has repeatedly been argued in response to previous 'parental manipulation' theories of the origin of eusociality, the inclusive fitness interests of workers and the mother queen do not coincide, because the two parties are differentially related to group offspring. The second is that worker behaviours such as eating of the queen's eggs, egg-laying in response to perceived declines in queen fecundity, sex-ratio manipulation by destruction of the queen's offspring and lethal aggression towards the queen all demonstrate that workers can act in their own interests and against those of the queen. In the light of this proven lack of worker passivity, workers' reproductive self-sacrifice is paradoxical at first sight and this is the genuine problem of altruism that inclusive fitness theory

has solved. (c) Alternative theory of eusocial evolution Nowak et al. [38] presented an 'alternative theory of eusocial evolution' (as alluded to in §2b), backed up by a 'mathematical model for the origin of eusociality'. However, these do not represent true alternative theories, either alone or in combination, because they do not make any points or predictions that have not been made within inclusive fitness theory' Speaking of various steps in a scheme suggested by Nowak et al, Bourke says:

'These steps constitute a reasonable scenario for the origin and elaboration of insect eusociality, but neither the sequence of steps nor the individual elements differ substantially from those that have been proposed to occur within the inclusive fitness framework…The alternative theory of eusocial evolution of Nowak et al. also exhibits two important weaknesses. To begin with, by allowing groups to form in multiple ways in step (i) (e.g. subsocially through parent–offspring associations but also by any other means, including 'randomly by mutual local attraction'), their scenario ignores two critical points that are inconsistent with it but consistent with inclusive fitness theory. First, the evidence is that, in almost all eusocial lineages, eusociality has originated in social groups that were ancestrally subsocial and therefore characterized by high within-group relatedness. Second, the evidence is that the origin of obligate or complex eusociality, defined as involving adult workers irreversibly committed to a worker phenotype, is associated with ancestral lifetime parental monogamy and hence, again, with predictably high within-group relatedness…In sum, Nowak et al. make a case for considering the effect of the population-dynamic context in which eusocial evolution occurs. But their alternative theory and its associated model add no fundamentally new elements on top of those identified within the inclusive fitness framework and, relative to this framework, exhibit substantial shortcomings…More fundamentally, as has long been recognized and repeatedly stressed , the haplodiploidy hypothesis is not an essential component of inclusive fitness theory, since Hamilton's rule for altruism can hold without the relatedness asymmetries caused by haplodiploidy being present. Highlighting the status of the haplodiploidy hypothesis to criticize inclusive fitness theory therefore misses the target. It also overlooks the fact that all diploid eusocial societies identified since the haplodiploidy hypothesis was proposed have turned out to be either clonal or family groups and so, as predicted by inclusive fitness theory, to exhibit positive relatedness. This is true of ambrosia beetle, social aphids, polyembryonic wasps, social shrimps and mole-rats. It is even true of a newly discovered eusocial flatworm. In short, the diploid eusocial societies, far from weakening inclusive fitness theory, serve to strengthen it…More broadly, the theory uniquely predicts the absence of altruism (involving lifetime costs to direct

fitness) between non-relatives, and indeed no such cases have been found except in systems clearly derived from ancestral societies of relatives. Finally, inclusive fitness theory is unique in the range of social phenomena that it has successfully elucidated, including phenomena as superficially dissimilar as the origin of multicellularity and the origin of eusociality, or intragenomic conflicts and conflicts within eusocial societies. Overall, no other theory comes close to matching inclusive fitness theory's record of successful explanation and prediction across such a range of phenomena within the field of social evolution. The challenge to any approach purporting to replace inclusive fitness theory is to explain the same phenomena without using the insights or concepts of the theory…Recent critiques of inclusive fitness theory have proved ineffective on multiple fronts. They do not demonstrate fatal or unrecognized difficulties with inclusive fitness theory. They do not provide a distinct replacement theory or offer a similarly unifying approach. They do not explain previously unexplained data or show that explanations from inclusive fitness theory are invalid. And they do not make new and unique predictions. The latest and most comprehensive critique of inclusive fitness theory, though broad-ranging in the scope of its criticism, suffers from the same faults. Certainly, relatedness does not explain all variation in social traits. In addition, the long-standing message from inclusive fitness theory is that particular combinations of non-genetic (e.g. ecological) and genetic factors are required for the origin of eusociality. Nonetheless, relatedness retains a unique status in the analysis of eusocial evolution because no amount of ecological benefit can bring about altruism if relatedness is zero.' Andrew F. G. Bourke 'The validity and value of inclusive fitness theory' Proc. R. Soc. B 2011 278, doi: 10.1098/rspb.2011.1465 14 September (2011)

One thing rarely mentioned by the groupies is the fact that, even were 'group selection' possible, selfishness is at least as likely (probably far more likely in most contexts) to be group selected for as altruism. Just try to find examples of true altruism in nature –the fact that we can't (which we know is not possible if we understand evolution) tells us that its apparent presence in humans is an artefact of modern life, concealing the facts, and that it can no more be selected for than the tendency to suicide (which in fact it is). One might also benefit from considering a phenomenon never (in my experience) mentioned by groupies--cancer. No group has as much in common as the (originally) genetically identical cells in our own bodies-a 100 trillion cell clone-- but we all born with thousands and perhaps millions of cells that have already taken the first step on the path to cancer and generate millions to billions of cancer cells in our life. If we did not die of other things first, we

(and perhaps all multicellular organisms) would all die of cancer. Only a massive and hugely complex mechanism built into our genome that represses or derepresses trillions of genes in trillions of cells, and kills and creates billions of cells a second, keeps the majority of us alive long enough to reproduce. One might take this to imply that a just, democratic and enduring society for any kind of entity on any planet in any universe is only a dream, and that no being or power could make it otherwise. It is not only 'the laws' of physics that are universal and inescapable, or perhaps we should say that inclusive fitness is a law of physics.

In a bizarre twist, it was apparently such thoughts that drove Price (creator of the Price equation and a devout Christian) to suicide. Regarding the notion of 'theory', it is a classic Wittgensteinian language game—a group of uses loosely linked but having critical differences.

When it was first proposed, evolution by natural selection was indeed highly theoretical, but as time passed it became inextricably linked to so many observations and experiments that it's basic ideas were no longer any more theoretical than that vitamins play critical roles in human nutrition. For the 'Theory of Deity' however it is not clear what would count as a definitive test. Perhaps the same is true of String Theory.

Many besides groupies note the pleasant nature of much human interaction and see a rosy future ahead-- but they are blind. It is crushingly obvious that the pleasantry is a transient phase due to abundant resources produced by the merciless rape of the planet, and as they are exhausted in the next two centuries or so, there will be misery and savagery worldwide as the (likely) permanent condition. Not just movie stars, politicians and the religious are oblivious to this, but even very bright academics who should know better. In his recent book 'The Better Angels of Our Nature' one of my most admired scholars Steven Pinker spends half the book showing how we have gotten more and more civilized, but he seems never to mention the obvious reasons why--the temporary abundance of resources coupled with massive police and military presence facilitated by surveillance and communication technologies. As industrial civilization collapses, it is inevitable that the Worst Devils of Our Nature will reappear. One sees it in the current chaos in the Middle East and Africa, and even the world wars were Sunday picnics compared to what's coming. Perhaps half of the 12 billion then alive will die of starvation, disease and violence, and it could be many more.
Another unpleasant fact about altruism, generosity and helping, virtually never mentioned, is that if you take a global long term view, in an overcrowded world with vanishing resources, helping one person hurts

everyone else in some small way. Each meal, each pair of shoes create some pollution and some erosion and use up some resources, and when you add 7 billion of them together (soon to be 12) it is clear that one person's gain is everyone else's loss. Every dollar earned or spent damages the world and if countries cared about the future they would reduce their GDP (gross destructive product) every year. Even were groupism true this would not change.

The facts that Wilson, Nowak et al have, for four years, persisted in publishing and making extravagant claims for grossly inadequate work is not the worst of this scandal. It turns out that Nowak's professorship at Harvard was purchased by the Templeton Foundation—well known for its pervasive sponsorship of lectures, conferences and publications attempting to reconcile religion and science. Nowak is a devout Catholic and it appears that a large gift to Harvard was contingent on Nowak's appointment. This made him Wilson's colleague and the rest is history.

However, Wilson was only too willing as he had long shown a failure to grasp Evolutionary theory—e.g., regarding kin selection as a division of group selection rather than the other way around. I noticed years ago that he co-published with David Wilson, a longtime supporter of group selection, and had written other papers demonstrating his lack of understanding. Any of the groupies could have gone to the experts to learn the error of their ways (or just read their papers). The grand old men of kin selection such as Hamilton, Williams and Trivers, and younger bloods like Frank, Bourke and many others, would have been happy to teach them. But Nowak has received something like $14 million in Templeton grants in a few years and who wants to give that up? He is quite outspoken in his intent to prove that the gentleness and kindness of Jesus is built into us and all the universe. Jesus is conveniently absent, but one can guess from the qualities of other enlightened ones and the history of the church that the real story of early Christianity would come as a shock. Recall that the bible was expurgated of anything that did not meet the party line (e.g., check out the Nag-Hammadi manuscripts). And in any case, who would record the harsh realities of daily life?

Almost certainly, the Nowak, Tarnita, Wilson paper would never have been published (at least not by Nature) if it had been presented by two average biologists, but coming from two famous Harvard professors it clearly did not get the peer review that it should have.

Regarding Nowak and Highland's book 'SuperCooperators' I will let Dawkins do the honors:

I have read the book by Nowak and Highfield. Parts of it are quite good, but the quality abruptly, and embarrassingly, plummets in the chapter on kin selection, possibly under the influence of E O Wilson (who has been consistently misunderstanding kin selection ever since Sociobiology, mistakenly regarding it as a subset of group selection). Nowak misses the whole point of kin selection theory, which is that it is not something additional, not something over and-above 'classical individual selection' theory. Kin selection is not something EXTRA, not something to be resorted to only if 'classical individual selection' theory fails. Rather, it is an inevitable consequence of neo-Darwinism, which follows from it deductively. To talk about Darwinian selection MINUS kin selection is like talking about Euclidean geometry minus Pythagoras' theorem. It is just that this logical consequence of neo-Darwinism was historically overlooked, which gave people a false impression that it was something additional and extra. Nowak's otherwise good book is tragically marred by this elementary blunder. As a mathematician, he really should have known better. It seems doubtful that he has ever read Hamilton's classic papers on inclusive fitness, or he couldn't have misunderstood the idea so comprehensively. The chapter on kin selection will discredit the book and stop it being taken seriously by those qualified to judge it, which is a pity.
http://whyevolutionistrue.wordpress.com/2011/03/16/new-book-shows-that-humans-are-genetically-nice-ergo-jesus/

A scathing review of 'SuperCooperators' also appeared from eminent game theorist/economist/political scientist (and Harvard alumnus) Herbert Gintis (who recounts the Templeton scandal therein), which is quite surprising considering his own love affair with group selection— see the review of his book with Bowles by Price www.epjournal.net – 2012. 10(1): 45-49 and my review here of his most recent volume 'Individuality and Entanglement'(2017).

Regarding Wilson's subsequent books, 'The Meaning of Human Existence' is bland and likewise confused and dishonest, repeating several times the groupies party line four years after its thorough debunking, and 'A Window on Eternity'- is a meagre travel journal about the establishing of a national park in Mozambique. He carefully avoids mentioning that Africa will add 3 billion in the near future (the official UN projection), eliminating all of nature along with peace, beauty, decency, sanity and hope.

In the end, it is clear that this whole sad affair will be only the tiniest bump on the road and, like all things which exercise our attention now, will soon be forgotten as the horrors of unrestrained motherhood bring society crashing

down. But one can be sure that even when global warming has put Harvard beneath the sea and starvation, disease and violence are the daily norm, there will be those who insist that it is not due to human activities (the opinion of half the American public currently) and that overpopulation is not a problem (the view of 40%), there will be billions praying to their chosen deity for a rain of Big Macs from the sky, and that (assuming the enterprise of science has not collapsed, which is assuming a lot) someone somewhere will be writing a paper embracing group selection.

Review of Human Nature-- Sandis and Cain eds. (2012)

Michael Starks

ABSTRACT

Like most writing on human behavior, these articles lack a coherent framework and so I hesitate to recommend this book to anyone, as the experienced ought to have about the same perspective I do, and the naïve will mostly be wasting their time. Since I find most of these essays obviously off the mark or just very dull, I can't generate much enthusiasm for commenting on them, so after providing what I consider a reasonable precis of a framework (see my other articles for an expanded version) I provide cursory comments on the various articles.

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 in Ludwig Wittgenstein and John Searle (2017). Those interested in my writings of more socio-political relevance may see my Suicidal Utopian Delusions in the 21st Century (2017).

"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)

"The decisive movement in the conjuring trick has been made, and it was the very one we thought quite innocent." Wittgenstein, PI para.308

" 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

"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)

"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."
Wittgenstein 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."
Wittgenstein PI 126

"What we are supplying are really remarks on the natural history of man, not curiosities; however, but rather observations on facts which no one has doubted and which have only gone unremarked because they are always before our eyes." Wittgenstein RFM I p142

"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 (this has to do with the Kantian solution to the problem of philosophy)." Wittgenstein CV p10 (1931)

"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

"...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

"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

"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

"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

"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

These quotes are not chosen at random but (along with the others in my reviews) are an outline of behavior (human nature) from our two greatest descriptive psychologists.

I will first offer some comments on philosophy and its relationship to contemporary psychological research as exemplified in the works of Searle (S) and Wittgenstein (W). It will help to see my reviews of PNC (Philosophy in a New Century), TLP, PI, OC, MSW and other books by these two geniuses, who provide a clear description of behavior that I will refer to as the WS framework.

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 (S3).

Searle's work as a whole provides a stunning description of higher order S2/S3 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.

S1 is the simple automated functions of our involuntary, System 1, fast thinking, mirror neuron, true-only, non-propositional, mental states- our perceptions and memories and reflexive acts 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 linguistic functions 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 just a fact that attempts to describe System 2 in terms of neurochemistry, atomic physics, mathematics, make no sense-- see W for many examples and Searle and Hacker (Human Nature)for good disquisitions on this).

One should take seriously W's comment that even if God could look into our mind he could not see what we are thinking--this should be the motto of Cognitive Psychology. A cognitive psychologist of the future my be able to see what we are perceiving and remembering and our reflexive thinking and acting, since these S1 functions are always causal mental states (CMS) while S2 dispositions are only potentially CMS. This is not a theory but description of our grammar. S, Carruthers (C) and others muddy the waters here because they sometimes refer to dispositions as mental states as well, but as W did long ago, S, Hacker and others show that the language of causality just does not apply to the higher order emergent S2 descriptions--again not a theory but a description of how language (thinking) works.

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). 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--called by S in PNC `The Phenomenological Illusion' (TPI). TPI is not a harmless philosophical error but a universal obliviousness to our biology which produces the illusion that we control our life and the consequences are almost certain collapse of civilization during the next 150 years.

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 (or not in the same sense), and do not have any definite time of occurrence and/or duration. But disposition words like "knowing", "understanding", "thinking", "believing", which W discussed extensively, have at least two basic uses. One is a peculiar 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')--i.e., they are Causally Self Referential (CSR), and the S2 one, 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) and are not CSR.

The investigation of involuntary fast thinking of System 1 has revolutionized psychology, economics 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 presumably not ever of slow System 2 dispositional thinking only, since any System 2 thought or intentional action cannot occur without involving much of the intricate network of "cognitive modules", "inference engines", "intracerebral reflexes", "automatisms", "cognitive axioms", "background" or "bedrock" (as W and later Searle call our EP).

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.

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 (S3). I expect this fairly well describes the basic structure of behavior.

"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 Conditions of Satisfaction (COS) of PI need a whole action while those of IAA only a partial one. He makes clear (e.g., p34) that PI are mental states (i.e., unconscious S1) while they result in IA which are conscious acts (i.e., S2) but both are causally self-referential (CSR). The critical argument that both are CSR is that (unlike beliefs and desires and other dispositions which have COS but don't cause them) it is essential that they figure in bringing about (causing) their COS. These descriptions of cognition and volition are summarized in Table 2.1 of MSW, which Searle has used for many years and is the basis for an extended one I have created. In my view, it helps enormously to relate this to modern psychological research by using my S1, S2, S3 terminology and W's true- only vs propositional (dispositional) description. Thus, CSR references S1 true-only perception, memory and prior intention, while S2 refers to dispositions such as belief and desire.

So, recognizing that S1 is only upwardly causal (world to mind) and contentless (lacking representations or information) while S2 has content and is downwardly causal (mind to world) (e.g., see my review of Hutto and Myin's `Radical Enactivism'), I would change the paragraphs from 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. 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 decoupled from intention) and other S2 propositional dispositions of our

slow thinking later evolved second self, are totally dependent upon (have their COS originating in) the 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 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. S1 and S2 feed into each other and are often orchestrated seamlessly by the learned deontic cultural relations of S3, 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.'

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.

Like Carruthers and others, S sometimes 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.

Thinking is propositional and so deals with true or false statements, which means that it is a typical S2 disposition which can be tested, as opposed to the true-only automatic cognitive functions of S1. Or you can say that spontaneous utterances and actions are the primitive reflexes of S1, while conscious representations(R1) are the dispositional Secondary Language Games (SLG's) of S2. It sounds trivial and indeed it is, but this is the most basic statement of how behavior works and hardly anyone has ever understood it.

Thus, 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, 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)." And I would restate his description on p129 of how we carry out DIRA2/3 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 DIRA2/3, but these are very restricted extensions of unconscious DIRA1 (the ultimate cause).

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 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/S3 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 who thinks a bit can see that this view is not credible.
Here 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).

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. 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 --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.

As I have noted in my other reviews, few if any have fully understood the later W and, lacking the S1, S2, S3 framework it is not surprising. Thus, one can understand why one cannot imagine an object while seeing it as the domination of S2 by S1. There is no test for my inner experiences, so whatever comes to mind when I imagine Jack's face is 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 the lack of any test makes them inapplicable. Two of W's famous examples used for combatting this temptation are 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 another of W's famous comments--"The decisive movement in the conjuring trick has been made, and it was the very one we thought quite innocent."

A sentence expresses a thought (has a meaning), when it has clear COS, and this means has 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) "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.

Likewise, with the question "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," or as S says its COS. Hence W's summation (p140 Budd) 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. 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.

I have had to cut the background info to a minimum, so those wishing for more please consult my many other reviews on W, S, Hutto, Johnston, etc., and especially the recent work of DMS and Hacker and of course much of the recent work of the psychologists and social psychologists on automatisms.

Now that we have a reasonable start on the Logical Structure of Rationality (the Descriptive Psychology of Higher Order Thought) laid out we can look at the table of Intentionality that results from this work, which I have constructed over the last few years. It is based on a much simpler one from Searle, which in turn owes much to Wittgenstein. I have also incorporated in modified form tables being used by current researchers in the psychology of thinking processes which are evidenced in the last 9 rows. It should prove interesting to compare it with those in Peter Hacker's 3 recent volumes on Human Nature. I offer this table as an heuristic for describing behavior that I find more complete and useful than any other framework I have seen and not as a final or complete analysis, which would have to be three dimensional

with hundreds (at least) of arrows going in many directions with many (perhaps all) pathways between S1 and S2 being bidirectional. Also, the very distinction between S1 and S2, cognition and willing, perception and memory, between feeling, knowing, believing and expecting etc. are arbitrary--that is, as W demonstrated, all words are contextually sensitive and most have several utterly different uses (meanings or COS). Many complex charts have been published by scientists but I find them of minimal utility when thinking about behavior (as opposed to thinking about brain function). Each level of description may be useful in certain contexts but I find that being coarser or finer limits usefulness.

The Logical Structure of Rationality (LSR), or the Logical Structure of Mind (LSM), the Logical Structure of Behavior (LSB), the Logical Structure of Thought (LST), the Logical Structure of Consciousness (LSC), the Logical Structure of Personality (LSP), the Descriptive Psychology of Consciousness (DSC), the Descriptive Psychology of Higher Order Thought (DPHOT), Intentionality-the classical philosophical term.

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)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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 Prior Intentions

*** Searle's Intention In Action

**** Searle's Direction of Fit

***** Searle's Direction of Causation

****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly called this causally self- referential.

******* Tversky/Kahneman/Frederick/Evans/Stanovich defined cognitive systems.

******** Here and Now or There and Then

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

Those wishing a comprehensive up to date account of Wittgenstein, Searle and their analysis of 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 (2016).

Now for some cursory comments on "Human Nature."

First, we can take it as given that modern humans did not exist until their evolution from other hominoids as recently as 50k years, or perhaps several times longer depending on one's view of the evidence on the emergence of language. Take away language and most of S2 and culture are not possible, as we can see in very young children, animals and the genetically deficient or brain damaged. Secondly, given the above WS framework, and the fact of evolution driven by inclusive fitness, there is, for me at least, very little of interest in nearly all discussion of society, politics, religion, history, ethics, and much else in this book or anywhere. If you don't understand the two systems in evolutionary perspective, the impossibility of private language, the way dispositional language works, the axiomatic nature of behavior, and the automaticity of behavior including deontology, it's just not possible to grasp social behavior or the language games that can be played with the term "Human Nature".
In my view, very very few people have this comprehensive vision and of those in this volume only Hacker approaches it. He is the leading authority on W and one of the very few who actually puts W into practice.

I have read him before and this essay is brilliant, as far as it goes, but he tends to preciousness (as another philosopher characterized him) and so can be a bit tedious. The criticisms he makes here of cognitive science are also well explored in his books "Human Nature" and "Philosophical Foundations of Neuroscience" and further explained and criticized in "Neuroscience and Philosophy (see my reviews). By and large I find him close to the mark but I think he exaggerates the actual damage the sloppy use of language by cognitive scientists can do. Since I have made detailed comments on these topics in my other reviews I will not repeat them here. Also, since I find most of these essays obviously off the mark or just very dull, I can't generate much enthusiasm for commenting on them.

Some of the papers try to decide what if anything is really unique or essential to us. Those unfamiliar with philosophy might be incredulous--isn't it obvious! But this is just the normal case--we know but we can't precisely say, just as we can't say what exactly makes something an apple or a splash. But philosophers want to try anyway. I suggest you should see this question as essentially the same as all philosophical questions. We want to understand how S1 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 trillions of organisms over some 3 billion years. Thanks! So, we struggle with science and ever so slowly describe the mechanisms of mind, knowing (as I think most of those who have really thought about it carefully would agree) that even should we arrive at "complete" knowledge of the brain, we would still just have a description of what neuronal pattern corresponds to seeing red and an "explanation" of why its red is not possible.

Glock I know well from his other writings and again think that if he would just read WS carefully (or better read my reviews) he could rate 5 stars instead of 3. Hinzen is bright but ranges too wide and too shallow and there is little in him really useful to a comprehensive understanding of human nature. Those with little knowledge of human genetics may find Crow interesting but of course it barely scratches the surface of an

immense subject. Clack has some mildly interesting comments, but for me psychoanalysis is a very dead horse and no amount of beating will make it stand up.

I hesitate to recommend this book to anyone, as the experienced ought to have about the same perspective I do, and the naïve will mostly be wasting their time. Among the endless books and articles available, I commend the 3 volumes on Human Nature edited by Carruthers, the Handbook of Evolutionary Psychology, my reviews of WS, Hutto, DMS, Hacker et all, and any good recent texts on human genetics and evolution.

Review of "Are We Hardwired? by Clark & Grunstein Oxford (2000)

Michael Starks

ABSTRACT

This is an excellent review of gene/environment interactions on behavior and, in spite of being a bit dated, is an easy and worthwhile read. They start with twin studies which show the overwhelming impact of genetics on behavior. They note the increasingly well-known studies of Judith Harris which extend and summarize the facts that shared home environment has almost no effect on behavior and that adopted children grow up to be as different from their stepbrothers and sisters as people chosen at random. One basic point that they (and nearly all who discuss behavioral genetics) fail to note is that the hundreds (thousands depending on your viewpoint) of human behavioral universals, including all the basics of our personalities, are 100% determined by our genes, with no variation in normals. Everyone sees a tree as a tree and not a stone, seeks and eats food, gets angry and jealous etc. So, what they are mostly talking about here is how much environment (culture) can affect the degree to which various traits are shown, rather than their appearance.

Finally, they discuss eugenics in the usual politically correct fashion, failing to note that we and all organisms are the products of nature's eugenics and that attempts to defeat natural selection with medicine, agriculture, and civilization as a whole, are disastrous for any society that persists. As much as 50% of all conceptions, or some 100 million/year, end in early spontaneous abortion, nearly all without the mother being aware. This natural culling of defective genes drives evolution, keeps us relatively genetically sound and makes society possible. However, it is now clear that overpopulation will destroy the world before dysgenics has a chance.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Wittgenstein and Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

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They summarize the genetics of behavior in the earliest true animals, the protozoa, and note that many of the genes and mechanisms underlying our behavior are already present. There is strong selective advantage to identifying the genes of one's potential mates and even protozoa have such mechanisms. There is data showing that people tend to pick out mates with different HLA types but the mechanism is obscure. They present various lines of evidence that we communicate unconsciously with pheromones via the vomeronasal organs and not mediated by smell neurons.

One chapter reviews the biology of the nematode C. elegans, noting the fact that it shares many mechanisms and genes with protozoa and with us due to the extreme conservativism of evolution. Some human genes have been inserted into it with apparent preservation of their function in us.

Moreover, they show what seem to be mechanisms of long term and short term memory controlled by genes in a fashion similar to that in higher organisms.

They note the general similarity of the nonvisual cryptochome mediated regulation of circadian rhythms in yeasts and fruitflies to those in higher animals and even to those in plants. It has been shown that both cry-1 and cry-2 cryptochrome genes are present in fruit flies, mice and humans and that the photoreceptor system is active in many body cells other than the retina, and researchers have even been able to trigger circadian rhythms from light shined on our leg!

After a brief survey of work on the famous slug Aplysia and the cAMP and Calmodulin systems, they review the data on human neurotransmitters. The chapter on aggression notes the impulsive aggression of low serotonin mice and the effects on aggressive behavior of mutations/drugs that effect the chemistry of nitric oxide— recently, to the amazement of all, identified as a major neurotransmitter.

In a chapter on consumption, they recount the now well-known story of leptin and its role in regulation food intake. Then a summary of the genetics of sexual behavior.

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There are also highly active fields studying human behavior which they barely mention— evolutionary psychology, cognitive psychology, parts of sociology, anthropology and behavioral economics—which are casting brilliant lights on behavior and showing that it is to a large extent automatic and unconscious with little voluntary awareness or control. The authors bias towards biology is a huge defect.
Finally, they discuss eugenics in the usual politically correct fashion, failing

to note that we and all organisms are the products of nature's eugenics and that attempts to defeat natural selection with medicine, agriculture, and civilization as a whole, are disastrous for any society that persists. As much as 50% of all conceptions, or some 100 million/year, end in early spontaneous abortion, nearly all without the mother being aware. This natural culling of defective genes drives evolution, keeps us relatively genetically sound and makes society possible. However, it is now clear that overpopulation will destroy the world before dysgenics has a chance.
writing a paper embracing group selection.

Boring, antiscientific, antirational, creationist trash: A Review of Adapting Minds- Evolutionary Psychology and the Persistent Quest for Human Nature by David Buller (2006)

Michael Starks

ABSTRACT

I bought this thinking anything from Bradford books and MIT must be good. Instead it's a boring, stupid, incompetent, antiscientific and antirational piece of closet creationist trash. Heads should roll at Bradford for this atrocity! If you must then start by reading the last chapter first as he conceals a frank statement of his anti- rationality til the end. I made detailed notes on it as I thought it was a serious work of science and was going to do a long page by page refutation but why bother! The praise from some Science and Nature reviewers shows they did not read it and/or have as little understanding of behavior as Buller. The positive comments from the jacket by Sterelny, Wilson, Sober and Caporael are due to the fact that they all share Buller's retro antirational blank slate views that human nature is due to our culture and the delusion of group selection (see my review of Wilson's The Social Conquest of Earth). The first part of the book is dull repeats of basic biology cribbed from intro texts and unrelieved by photos or drawings. Along the way, there are some incredibly bizarre takes on the use of language and scientific method. Then you find an attempt to refute some well-known studies of stepchild abuse. As you get to the end he lets his anti-science and anti-rationality out in the open, telling us that regardless of whether our behavior is innate we should not investigate it!

The fact that our brain is no different from our other organs and it's functions a product of genes and evolution continues to be resisted or just ignored not only by academics but by the general public. Nevertheless, the basics of our behavior are as innate as our heartbeat and detailed evidence (for those who have trouble with the obvious) is all around us everywhere we look once our

eyes are opened-just watch people doing anything or turn on the tv (or see the huge and rapidly growing scientific literature). Novices can start with Pinker's "The Blank Slate" but there are now dozens of good popular and scientific books on evolutionary psychology and hundreds of articles in the literature of philosophy, psychology, economics etc. The articles in Buss's The Handbook of Evolutionary Psychology 2nd ed. and the 5th ed of his EP text, and some at the end of Gazzinaga's The Cognitive Neurosciences 4 are good starting points for the serious reader., and science are all manifestations of our innate psychology (with the minor extensions we call culture and civilization), you can look almost anywhere in literature or life to study our adapted mind except here.

Those who wish a more detailed exposition of the use of Wittgenstein and Searle in the description of behavior may consult my book The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017), while those of a more socio-political nature are collected in Suicidal Utopian Delusions in the 21st Century (2017).

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you find an attempt to refute some well-known studies of stepchild abuse. He may have a minor point here that they have some statistical flaws. Worth a short article in a professional journal but hardly a book. As you get to the end he lets his anti-science and anti-rationality out in the open, telling us that regardless of whether our behavior is innate we should not investigate it! The fact that our brain is no different from our other organs and it's functions a product of genes and evolution continues to be resisted or just ignored not only by academics but by the general public.

Nevertheless, the basics of our behavior are as innate as our heartbeat and detailed evidence (for those who have trouble with the obvious) is all around us everywhere we look once our eyes are opened--just watch people doing anything or turn on the tv (or see the huge and rapidly growing scientific literature). Novices can start with Pinker's "The Blank Slate" but there are now dozens of good popular and scientific books on evolutionary psychology and hundreds of articles in the literature of philosophy, psychology, economics etc. The articles in Buss's The Handbook of Evolutionary Psychology 2nd ed. and the 5th ed of his EP text, and some at the end of Gazzinaga's The Cognitive Neurosciences 4 are good starting points for the serious reader.,

Once you realize that psychology, philosophy, history, politics, art, music, anthropology, literature, economics, sociology, law, and science are all manifestations of our innate psychology (with the minor extensions we call culture and civilization), you can look anywhere to study our adapted mind, including your own home and office.

Review of The Science of Marijuana by Leslie Iverson 283p (2000)

Michael Starks

ABSTRACT

One should start by putting things in perspective. There are about 400,000 yearly USA deaths due to tobacco, 100,000 each to alcohol and prescription drugs and about 7600 to aspirin and other OTC painkillers. Worldwide we can expect that the figures will be about 10 million for tobacco, 2.5 million each for others and about 200,000 for aspirin and OTC painkillers. If you calculated the lifetime risks of death or injury from using marijuana, it is probably comparable to that of driving ten km and significantly less than that of putting on a pair of skis. In addition, the young people who comprise the majority of the users are heavy risk takers, a very high percentage of whom have personality disorders. There are about 60 million schizophrenics and the same number of manic depressives in the world. When you add the depressives, schizotypal disorders, anorexics, alcoholics etc. it is clear that perhaps a billion people have major mental problems, nearly half of all those are in the prime drug taking ages. In addition, nearly all of us have periodic mood swings, medical problems and personal crises. A large percentage of the population will likely show memory deficits and other problems. Nevertheless, if any such effects appear in marijuana users they will almost certainly be ascribed to the drug. In reality, is not clear that anyone has ever had serious permanent mental problems due to casual recreational marijuana use alone, and its potential medical benefits are enormous. It has a long and remarkable history as a highly effective and safe medicine in many societies. Nevertheless, the federal government has chosen to ignore medical advice and legal opinion and classify it as a dangerous drug with no recognized medical value and the governments of many other countries have followed along like trained dogs. On the whole, this is an excellent book as Iverson has done his homework and tries to be impartial. Overall the book is much saner than most of the time from the medical establishment but it is out of date and

needs to be rewritten to address the criticisms above and to take note of the huge changes in social and medical status recently.

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In addition, the young people who comprise the majority of the users are heavy risk takers, a very high percentage of whom have personality disorders. There are about 60 million schizophrenics and the same number of manic depressives in the world. When you add the depressives, schizotypal disorders, anorexics, alcoholics etc. it is clear that perhaps a billion people have major mental problems, nearly half of all those are in the prime drug taking ages. In addition, nearly all of us have periodic mood swings, medical problems and personal crises. A large percentage of the population will likely show memory deficits and other problems.

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On the whole, this is an excellent book as Iverson has done his homework and tries to be impartial. Nevertheless, some of the biases nearly universal in scientific and government circles are still evident. For example, on page 174 he states that the use of cannabis for mood disorders and sleep is obsolete because of the availability of Prozac, Valium and sleeping pills. However, the very well-known downsides to the medical drugs (days to weeks before they act, inability of patient to titrate the dose, common major and often fatal side effects, serious and frequent bad interactions with other drugs and alcohol, often addictive, high cost, patients commonly overdose, frequent failure to be fully effective, suicides, accidental poisoning of children, mental clouding, etc.) are not mentioned. Cannabinoids in contrast act immediately, are almost nontoxic, easily titratable, have few known interactions, often produce pain reduction, should be very low cost, are usually effective, have no serious or fatal side effects, essentially nonaddictive, overdose unlikely, almost impossible to commit suicide with, and highly unlikely to be life threatening if they get into children´s hands). Also with some experience, a large percentage of patients will come to enjoy the usually moderate but often useful, side effects (stimulation of appetite and sociability, increased enjoyment of music, facilitation of sex, pain reduction, boredom reduction, etc.).

All of these facts have been known for a long time and it is primarily the lunatic opposition of the US government (and its imitators) that has prevented cannabinoids from becoming major medicinals. However, the fact that marijuana had to be either smoked or taken as pills, which took a long time to act, were absorbed irregularly, and could not be easily titrated by doctor or patient, was also a major impediment. Since this book was written, GW Pharmaceuticals (which spent some $42 million in a few years just for marketing) and others have introduced throat sprays, inhalers and high tech sublingual metering devices (that can even keep track of doses and times and send the data to remote medical centers) that largely overcome these problems. These advances, coupled with the vast amount of research on the brain´s natural (endogenous) cannabinoid agonists and antagonists and receptors is rapidly revolutionizing the

science of cannabinoids and will almost certainly lead to the introduction of many into mainstream medicine (much to the chagrin of the government and other antidrug groups which have long insisted cannabis has no medical use). In addition, the opposition to the cultivation and use of cannabis varieties used for hemp (which has little or no THC) should gradually cease. This is critical as hemp is a very environmentally friendly plant which can replace much of the nonfriendly wood, paper, cotton, and synthetics industries and is useful for food and oil as well.

The eagerness of the US and European governments to fund research showing the bad effects of marijuana has led to a major industry employing hundreds of scientists and their assistants and resulting in dozens of books and reports and several thousand articles over the last 40 years. Almost all this work is irrelevant to the issue of whether marijuana, as used by most persons, has any substantive negative effects. Iverson is mostly objective but errs sometimes—e.g., in citing the book of Solowij as showing negative effects of marijuana smoking on memory. Solowij, like virtually all such studies on bad effects of cannabinoids and psychedelics on humans, has major flaws (e.g., no good controls) which render the conclusions useless. There are also other studies which show little or no negative memory effects from above-normal levels of chronic use. Of course, most people do not have a high chronic intake, nor do they take large amounts of alcohol and a very wide variety of legal and illegal drugs (often intravenously) over long periods. The subjects in such studies are preselected for long term heavy use and are essentially uncontrolled for abuse of other drugs and alcohol and there are no real control groups (e.g., persons who are identical in their drug and medical history and long term mental stability--or lack thereof--whose only difference is that they have not smoked marijuana every day for many years). Making such careful investigations of the subjects and finding a good control group would be difficult, but without this such studies are useless.

Iverson follows the normal course when discussing the sociology of psychoactive drug use indicating that alcohol introduces most persons to

drugs, but he ignores coffee, tea, and other caffeine beverages which are, incidentally, immensely more destructive than marijuana and probably exceed tobacco and alcohol. In the case of caffeine drinks the damage is not to health but from the destruction of vast areas of forest for growing, the chemicals used for growing, the huge loss of topsoil annually, the use of energy and pollution generated to manufacture and distribute them and their containers etc. Of course, the similar costs apply for tobacco and alcohol and should be added to their health effects when assessing social costs.

All things considered, the damage caused by marijuana (and other psychedelics) is so trivial in comparison that is not worth mentioning. Like many, he does not see that it is the government´s policy and not the drugs that are the danger to society. The huge amounts of money spent to suppress marijuana and the approx. 500,000 arrests a year in the US alone are a total waste of time and socially counterproductive. Of course, the retards in the government are only there because they are put into office by the retards who vote for them. Let us get down to the basics of monkey psychology here--any kind of significant activity which is not currently regulated activates the control (and perhaps the contamination) templates in the brain and leads to the compulsion to suppress it. Bush and the DEA, and billions of others, feel that it´s only right and just to manipulate and abuse anyone as this is what their inference engines tell them to do. Unfortunately, these engines were evolved about a million years ago and are completely self-destructive in the 21st century. This is standard cognitive psychology so if it seems odd to explain things this way please read up a little.

He notes that there are more than 100,000 deaths each year in Britain alone due to tobacco and alcohol each but does not then note that this means they do more damage in Britain alone every day than marijuana and all the psychedelics have done in the entire world since the beginning of recorded history. Tens of thousands die and millions suffer serious effects every year from aspirin and other OTC painkillers, antibiotics, NSAIDS etc. Anyone who doubts can easily find the statistics on the net. In

contrast, one has to look hard and be very noncritical to find a handful of possible yearly deaths and injuries due to cannabinoids and psychedelics. Mostly they have multiple drugs in their systems, there is no test done for alcohol, no investigation of preexisting disease and the majority are indistinguishable from the much larger number who die at raves from heatstroke.

Not only are cannabinoids amazingly nontoxic but government supported studies of rats and mice given heavy daily doses of THC for two years showed a dramatic drop in various kinds of cancer! In addition, a study of heavy daily marijuana users who smoked it for average 19 years showed decreased asthma and emphysema relative to controls! Of course, it is only recently and with great reluctance that the government has started to sponsor research that may show desirable effects. He cites one study that claimed to show an increase in injuries in smokers but it lacked any good controls and so is useless.

Likewise, his preoccupation (reflecting the official views of course) with the modest psychological dependency of some smokers seems totally absurd in comparison with the massive addiction and habituation to alcohol, tobacco, caffeine and hundreds of medical drugs which have a high incidence of major side effects, morbidity and mortality almost totally lacking with marijuana.

A cynic might say that the US government concentrates on suppressing marijuana and psychedelics because 200 years of eroding the constitution and the bill of rights has led to such total fascist control that there are few other things left to suppress.

He also makes the statement that LSD has no medical use. He does not mention that doctors and therapists have been forbidden to use psychedelics by the police states for some 40 years in spite of a vast and clear literature showing they have unique medical applications.

A large and rapidly expanding number of analogs and derivatives of both marijuana-derived and endogenous (e.g., anandamide) cannabinoids are proving to be even more effective than the THC which is the major active constituent of natural cannabis. One can expect to see cannabinoids that act faster and more effectively, with fewer side effects and also antagonists to them that will rapidly terminate their action (though there has been limited research and Iverson does not discuss this).

Overall the book is much saner than most from the medical establishment but it is already out of date and needs to be rewritten to address the criticisms above.

A Review of Ecstasy: the complete guide Judith Holland Editor 454p (2001)

Michael Starks

ABSTRACT

One should start by putting things in perspective. The following background is necessary not only for all studies of psychoactive drugs, but for all studies of human behavior. Each year there are about 400,000 USA deaths due to tobacco (lung cancer, emphysema, cardiac disease etc.), 100,000 each to alcohol and prescription drugs, and about 7600 to aspirin and other OTC painkillers. Worldwide we can expect that the figures will be about 10 million for tobacco, 2.5 million each for others and about 200,000 for aspirin and OTC painkillers. There may be 1 million people in the world with fetal alcohol syndrome (severe brain damage due to maternal drinking) and it is the leading cause of mental retardation in most countries. There are also perhaps 15 million people who have fetal alcohol effect (lesser degrees of brain damage) with about 200,000 born every year. I suspect this is a gross underestimate. None of the psychedelics nor cannabis are known to produce fetal injury or brain damage when taken in normal amounts. All things considered, if you calculated the lifetime risks of death or injury from taking ecstasy, LSD or marijuana, it is probably comparable to that of driving ten km and significantly less than that of putting on a pair of skis.

In addition, the young people who comprise the vast majority of the users are heavy risk takers, a very large percentage of whom have personality disorders. There are about 60 million schizophrenics and the same number of manic depressives in the world. When you add the depressives, schizotypal disorders, anorexics, alcoholics etc. it is clear that perhaps a billion people have major mental problems, nearly half of all those are in the prime drug taking ages. In addition, nearly all of us have periodic mood swings, medical problems and personal crises.

Based on various data in this book and elsewhere, it appears that about 20 million people will take something like 200 million pills of ecstasy each year. A 2016 report said there were 12 deaths related to ecstasy at raves in the USA from 2006 to 2016. If you read the coroner's reports, these seem to be due to drinking too much or too little water and usually to taking large amounts of other drugs and/or alcohol while standing or dancing all day in the sun in temperatures over 100 degrees. Some of the people had prior medical conditions, though these are rarely investigated or reported. Deaths from alcohol use and from heatstroke without drug use are common, and provide the essential control groups for judging the extra danger from ecstasy, but nobody thinks to report them in any such study or news story I have ever seen. All things considered, ecstasy deaths (like those for marijuana and other psychedelics) are extremely rare and seldom if ever due to the direct toxicity of ecstasy alone --the psychedelics in general having some the widest margins between the effective and the toxic doses of any drugs in medicine.

The fact is there was enough data to prove the psychedelics were safe and therapeutically effective 40 years ago (i.e., 1976). If they were available on prescription with the same general indications as other psychoactives (e.g., Prozac, Elavil, Valium, etc.), most of the black market and adulterated drugs would quickly fade away.

It is not clear that any mentally stable person has ever had serious permanent mental problems solely due to taking ecstasy (though they often have serious permanent benefits) and its potential as a therapeutic agent are enormous. It has a long and remarkable history as a highly effective and safe therapeutic adjunct. Nevertheless, as with many other psychedelic drugs, the federal government has chosen to ignore medical advice and legal opinion and classify it with heroin as a Schedule 1 drug with no recognized medical value and the governments of many other

countries have followed along like trained dogs.

This book aims to provide accurate information on all aspects of MDMA (ecstasy) and it accomplishes this quite well.

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countries have followed along like trained dogs.

This book aims to provide accurate information on all aspects of MDMA (ecstasy) and it accomplishes this quite well.

The authors mostly try very hard to be fair and balanced in their approaches and are mostly experts in the field. They caution about the difficulty of applying the data on animals to humans but they often do not go far enough in emphasizing the probable irrelevance of the animal data to humans. E.G., in the chapter on risks, not only do most of the animals get large amounts intravenously, but there are no good control data. We need to see what happens with the same animals with the same routes and relative doses with a variety of commonly used medicines (e.g., antidepressants, mood elevators, asthmatics, appetite depressants, cold medicines, OTC pain pills etc. etc. Will they, as one suspects, show similar changes in their brain chemistry, memory, blood flow etc.? Nobody knows as the government sponsored studies almost never test them. We can only guess from scattered data in other studies which often show the same kinds of changes.

Consequently, if we applied the same criteria used for Prozac, Elavil, aspirin etc. we would either have to outlaw nearly all the drugs in current medical use or legalize all the psychedelics. However, the government has no interest in being rational, fair or even sane and certainly none in allowing us the freedoms supposedly guaranteed by the Constitution, and the Bill of Rights.

Wanting badly to err on the side of caution, several of the authors repeatedly warn (e.g., p111) of the possibility of subtle long term damage, yet they seem unconcerned by some half century of massive long term use of antidepressants, amphetamines, etc. to say nothing of alcohol, caffeine and nicotine. And only one bothers to mention (p 139) that a half century of studies on chronic users (often intravenous and multidrug abusers) of the closely related amphetamine and methamphetamine have failed to show evidence of Parkinsonism. And let us keep in mind that about 99%

of all the MDMA (ecstasy) fans use it only a few times in their lives in low oral doses. The same is true of most other psychedelics and so it seems likely that the only long term behavioral effects in the vast majority of users will be some increase in insight, less rigid personalities, broader interests in art, music, religion and a generally happier life.

The young people who comprise the vast majority of the users are heavy risk takers, a very high percentage of whom have personality disorders. There are about 60 million schizophrenics and the same number of manic depressives in the world. When you add the depressives, schizotypal disorders, anorexics, alcoholics etc. it is clear that perhaps a billion people have major mental problems - nearly half of all those are in the prime drug taking ages. In addition, nearly all of us have periodic mood swings, medical problems and personal crises. In addition, as some of the authors note (and as Holland often interjects in her editorial notes) the ecstasy users are usually taking other drugs before, during and after their Ecstasy (and marijuana and other psychedelic experiences). These include, almost universally, alcohol, tobacco and caffeine (which are almost always ignored) as well as cocaine, amphetamine and methamphetamine, ketamine, dextromethorphan, asthmatics, and a wide variety or uppers, downers and prescription mood altering agents including birth control pills and Viagra, to say nothing of the steroids that have been in wide use in professional athletes in all sports (with the frequent appearance of new ones difficult or impossible to detect). Yet as Holland and others note, these other drugs are usually not mentioned and a really good drug screen on the users appearing in clinics or used in studies is seldom done. The point of all this is that the claim that ecstasy is dangerous is not correct (and other psychedelics are mostly the same). It´s probable that skiing kills and injures more people in one season (most in car accidents!) or tobacco or alcohol in one day, than all psychedelics combined have done since the beginning of recorded history. Thus, the demonizing of them does not correspond with reality. In fact, since more than 99% of all media on MDMA is negative, it would be reasonable and desirable to remove all the comments on possible negative effects from this book and publish it as MDMA: miracle medicine for the 21st century!

Billions of dollars have been spent on studies and programs aimed at showing that psychedelics are bad and almost nothing on their many positive effects. In fact, most of the world has (naturally) followed the poorly educated, deeply repressed, conservative Christians who control the US Govt. in outlawing, for over 40 years, any medical use and any research that might show benefits! Only recently has this begun to change. The vast amount of practical experience with their benefits cannot even be published and the tens (maybe hundreds) of millions who have had major positive experiences cannot talk about them. It's clear as day that the only serious problem with ecstasy is that it is new and it triggers the control and maybe the contamination templates in the monkey mind.

The evidence presented here shows that MDMA is very safe, rarely illusionogenic (though most authors follow the common practice of calling visual effects hallucinations, which they definitely are not).

Hallucinations-e.g., seeing and hearing persons who are not there- are characteristic of schizophrenia, toxic psychoses, belladonoids (e.g. datura), and dissociative anesthethics (PCP, ketamine). They are so rare with psychedelics that one suspects that nearly all such cases are due to preexisting psychosis. MDMA probably belongs (with a variety of other drugs invented by Shulgin) in a new class called entactogens. These are unique in that in addition to catalyzing positive emotions and bonding, they are rapidly acting, nonsedating anxiolytics (decrease anxiety), anaesthetics (pain killers) and antidepressants (which take days or weeks to act in comparison with minutes for MDMA!) with remarkably few and mild side effects (in dramatic contrast with nearly all medical drugs which have severe side effects that are often fatal).

There is along chapter devoted to the toxicity data on rats and monkeys usually dosed intravenously and chronically with huge amounts and to reports on chronic, high dose often IV multiple drug abusers, probably with a high incidence of preexisting mental and physical problems. Only Holland´s desire for completeness justifies the inclusion of such data in this book. It has about as much relevance to the occasional oral use by the

vast majority of MDMA users as the study of chronic alcoholics has to the description of a dinner party where 2 people consume a bottle of wine.

Jansen (p87, 89) is afraid of this self-medication at home and especially at raves (massive all day and/or night music events) without a therapist but probably well over 300 million people in the last 50 years have taken some 2 billion trips with LSD, MDMA, MDA, mescaline, peyote, amanita, psilocybin mushrooms, ketamine and many other psychedelics with amazingly little evidence of negative effects. And of course, syrian rue, amanita muscaria, peyote and other cacti, pitruri, datura, ayahuasca and countless other plants have been consumed in hundreds of societies for thousands and likely for tens of thousands of years, giving rise to much of our art, music and religion, with hardly a trace of tradition regarding bad effects, which people were usually quick to notice and avoid. And, as Jansen (the author of an excellent recent book on ketamine) notes, with rare exceptions, nobody writes up for journals, or sends to the media, reports of positive effects.

One way to look at the really big picture is to call on our modern knowledge of cognitive and evolutionary psychology which tells us that the foundations of human behavior are the result of the mechanical, unconscious functioning of the inference engines or templates that were evolved hundreds of thousands of years ago (or millions or tens or hundreds of millions depending on one´s point of view) to enable small bands of primates to survive long enough to reproduce. These templates take in all the info from the eyes, ears, etc. and memory and produce feelings or intuitions about how one should behave to optimize survival. However, templates for control, predator avoidance, contamination, etc. which were so rational in a small group on the African savanna (or in the trees a few million years earlier) are totally irrational and even suicidal now. Relentlessly, and in agonizing slow motion, 7.6 billion (11 billion by 2100) people are following the dictates of their templates while the biosphere and what passes for civilization collapses around them. The poorly educated, devious, power mad, repressed and unconscious persons who gravitate to positions of power in government, military,

religion, industry and academia are orchestrating the end of the world while their like-minded overpopulation generating constituents cheer wildly. It is these people and not the psychedelic users who are the dangerous criminals.

Ecstasy and other psychedelics, preferably combined with various kinds of meditation and other physical and mental therapies have a major potential to help people to break free from the automatisms that have guided behavior for millions of years. Billions of people need these medicines to avoid a lifetime of suffering and unhappiness and often, suicide. Let us hope that they hold the answer, as there does not seem to be any other, and let us hurry--time is running out.

Review of Listening Into the Heart of Things: on MDMA and LSD by Samuel Widmer 302p (1997) (Translation of German Edition of 1989)

Michael Starks

ABSTRACT

This is an early volume from a much-respected psychedelic psychotherapist. He has written several other books since this one but until recently none of his books were on Amazon and still you can only find a German edition and a Spanish one (from 1993) but no English one (except a couple used copies). This is sad since these drugs have enormous therapeutic potential but afaik government suppression still prevents their use. The most interesting and readable parts are the case histories of drug therapy, especially his own-e.g., on pages 114, 166 and 178. Though a very advanced therapist compared to many, he is far from finished with his intellectual growing up and clings to his psychoanalytic background even though he often mentions its extreme shortcomings. The often painfully awkward text is full of insights from his own therapeutic voyages and those of his patients interspersed with psychoanalytic nonsense.

Part of the awkwardness may be due to bad translation from the German but the lack of a rational spiritual framework is a major problem (as with most therapy-or most life for that matter) that he only occasionally seems to recognize. He also sometimes veers off into the ozone-e.g., after many pages of sensible dialog he can opine that varicose veins and cancer are a result of the splitting of a psychosis (p99)! He quotes Zen and Sufi stories, Krishnamurti and Al Ghazali and even Castenada (seemingly unaware of his exposure as a fraud 20 years ago!), yet he seems oblivious to the fact that meditation is the most powerful therapy there is and to the presence around him in his own country and all over the globe of the most diverse and effective therapeutic community that has ever existed-that of the students of the great Indian mystic (ie, psychotherapist) Osho. What a great pity! He could have

learned so much and advanced his therapy so far. But like most people he deliberately or unconsciously avoids anything which might wake him up too much. It's possible however that he just avoids mentioning Osho as he's radical enough to trigger the control templates in the monkey brain and enlightenment has the power to change one's whole life and not just put a bandaid on as other therapies usually do. Widmer refers repeatedly to the great LSD therapy pioneer Stanislav Grof, whose writings are one of the first that the interested reader may want to consult. Also, anyone who has a serious interest in psychedelic therapy should read Myron Stolaroff´s " The Secret Chief "-an account of the most remarkable clandestine therapist of this type of all time. It tells the story of the late Leo Zeff, who helped thousands to find themselves with the skilled and varied use of a wide variety of psychedelics. As the book is hard to find you may wish to read the info on Zeff on the web. In addition the clinical chapters in the excellent Ecstasy :the complete guide by J. Holland(2001) and her web page www.drholland.com (and elsewhere on the net) provide a broad framework and guide to therapy that is lacking here. A lovely book to add to any drug or therapy library, if you can find it.

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It is well known that since he experimented with MDMA ("ecstasy") it became a common club drug used by millions for its relatively mild distortions of reality and its strong tendency to open up emotions—quite unlike LSD, mescaline or psilocybin in these respects.
Widmer realized via these drugs, as many do via meditation, that it is the mind that is everyone's problem. For most educated moderns, psychoanalysis is totally obsolete and his insistence on doing psychedelic

therapy in this context is most sad. Other therapeutic contexts, including that of any of the wide variety of meditations seem much more likely to give results.

The chapters end with poetic passages describing his lovely environment (presumably the Swiss Alps) that feel as though they are written by a different person. He also has many nice full page, full color paintings in the book. He says repeatedly that the drugs produce rapid breakthroughs that would not happen with conventional therapy, but then says other places that they would happen anyway (e.g., with Helga´s therapy on pg 15)! Most experienced psychedelic therapists would agree that conventional therapies will not achieve the majority of the breakthroughs given by psychedelic therapy and there is a substantial older literature but of course governments have vigorously suppressed psychedelic research until permitting limited trials very recently. Talking therapies, and especially psychoanalysis, are so slow and expensive that few have the time and money for them and everyone suffers (and many die) while waiting for a cure. In any event, it's clear that all conventional therapies (with some possible exceptions) only put a bandaid on the problems (though it may be a good one) and only meditation, with or without psychedelic medication, has the power to dissolve the ego and all the problems permanently. It is not an easy path, (and perhaps not possible for most) but neither is any other, and even a few steps can help alot.

He has written several other books since this one but until recently none of his books were on Amazon and still you can only find a German edition and a Spanish one (from 1993) but no English one (except a couple used copies) and they seem not to be on the 'free book' sites either. This is sad since these drugs have enormous therapeutic potential but government suppression still prevents their use so underground therapists and self-therapy are the only routes.

A very brief review of the life and work of neuroscientist, physician, psychoanalyst, inventor, animal rights activist and pioneer in dolphins, isolation tanks and psychedelics John C Lilly 1915-2001.

Michael Starks

Abstract

Lilly was one of the greatest scientists and pioneers on the limits of human possibility but after his death a collective amnesia has descended and he is now almost forgotten. His Wiki is good but inevitably incomplete so here are a few missing details and viewpoints on his life along with brief comments on this particular book. The best site is http://www.johnclilly.com/

Lilly was one of the greatest scientists and pioneers on the limits of human possibility of modern times, but after his death a collective amnesia has descended, and he is now almost forgotten.

Lilly was a generation (or more) ahead of his time. He is almost single-handedly responsible for the great interest in dolphins (which led to the Marine Mammal Protection Act in the USA and helped to found the animal rights movement). In 1958, he noted that the brains of elephants and cetaceans were larger than ours, that we should not abuse them and that it was one our most important projects to communicate with them. He invented sensory isolation tanks (at NIMH in 1954) and used them extensively with and without powerful psychoactive drugs at a time when it was thought that either the brain would shut down or one would go insane if external stimuli were eliminated.

He created methods for implanting electrodes in mammal brains and was

planning to do it to himself. He was one of the first to make serious use of computers in bioscience research and created the hardware and software to make the first attempts to communicate with dolphins. He self-experimented with dangerous physiological investigations in high altitude medicine for the military during WW2, took LSD with dolphins and movie stars, submitted himself to the rigors of Arica training, and taught classes at Esalen. He was the first one to investigate the bizarre psychedelic ketamine, and his results (published in the two last chapters of his book `The Scientist`) are still the best data on the dose/effect relation of any psychedelic on one person. And all this happened before most of us were born!

He had courage, honesty and integrity that is rare anywhere and almost nonexistent in science. His goal was to find the ultimate truth about everything and he went about as far as anyone ever has. He had little patience with the stupid and hypocritical games one has to play to fit into monkey society. Of course, the reaction of the establishment was predictable. He left the NIMH and was never given any government or academic support for the last 35 years of his life. His paper and comments at a conference on sensory deprivation were removed from the published version. He was not invited to government sponsored symposia on dolphins (he had refused to help develop them as weapons), though he clearly knew more about them than anyone in the world.

He liked to live and work on the edge and few could keep up with him, as this book makes clear. If you have read some of his other books it will be much easier going. He was a pioneer in consciousness research and pushed the boundaries of our understanding of who we are and what we might become. Among other things he catalogs here the various states reached by drugs, meditation, and isolation, tries to determine their significance, and suggests how to use them.

As a result of all his research, especially his months of continuous hourly injections of ketamine, he became convinced that our ordinary reality was not the only one. During his trips, he was often in communication with members of a civilization 1000 years in the future. We all allow ourselves such experiences every time we watch a sci fi movie and sometimes it leaves us more than just amused, but when anyone meditates or takes a drug to do it we tend to discount the results. Lilly however, took it all seriously, and parts of this book explain why. Whatever our mind produces -- by any means --only happens because our brains are programmed by our genes to make it possible. So, it´s at least plausible that any of these routes inward reveal fundamental aspects of what´s possible for us in the future, or even for some other species elsewhere in the universe. If you find his scientifically based viewpoints irrational, consider that most people believe without evidence (really with abundant evidence to the contrary) in good and bad luck, in super beings living in space who rule the earth, in a place in spacetime where dead people go, in stars millions of light years away influencing their lives, and in ghosts, angels, witches, and gods that come to earth to inhabit statues that read our thoughts and violate all the laws of physics, chemistry and biology in order to help us personally.

He describes his tank work (and lots more) in The Dyadic Cyclone, The Center of the Cyclone, and in Programming and Metaprogramming in the Human Biocomputer (1967) and other books and papers.

His book Simulations of God is a plea to examine your beliefs with an open mind.

He defines metabeliefs as those about belief systems. He says that our simulations of reality (with meditation, isolation, drugs, computers) can provide access to other realities which may include the future, the past, or extraterrestrial. He refers to metaprograms as learning tools (symbols, programs, languages, ideas, models) which our central programs (mind or part of it) runs all the time. Cognitive psychology did not really exist at the time he was most active and now we would likely call the central

programs cognitive templates, modules or inference engines.

He refers to self-metaprograms (or essences) as parts of the mind that program our experiences.

Though he carried out an exhausting and dangerous program of self-experimentation with psychedelics (what many now call entheogens), he does not believe they are a final or complete path to higher consciousness. Yes, as I reflect on this, I note that tens of millions have successfully explored their cognitive templates with psychedelics while meditation alone may have generated a few hundred thousand satoris and probably less than 100 living mystics. It is also clear that psychedelics have led millions to meditation. He mentions the very psychedelic Revelations of St. John and understands that Jesus taught revelation from within—i.e., the same sort of self-transcendence as Taoism and Buddhism. He discusses how we use drugs, sex, money, groups, war etc. as substitutes for God. God as compassion, science, consciousness or superspace (the then current concepts of cosmology are explained and he imagines the universe collapsing and being reborn--very contemporary!). He discusses god in here vs god out there but notes that if it's out there then it's a puzzle where math comes from. His experiences make him doubt that death is the end.

He was very open to all ideas and his desire to consider all points of view makes some parts of his books rambling and a bit incoherent. He crams so many ideas on each page that there is easily enough in each to form the core of ten books or a lifetime of research and personal exploration. Among the blizzard of mind boggling ideas are: war is the result of a future civilization using us for war games; we are god simulating himself, our interstellar rockets find intelligent machines that follow us back to earth and take over; government sponsored meditation classes, computers that control and monitor all communication and take control of civilization, our genes generate the illusion that we live in a certain and determinate universe; we are simulated by God or vice versa.

Though he must have crossed paths countless time with Indian mystics and Buddhists, strangely, he was most influenced by an obscure American mystic named Franklin Merrell- Wolff—another remarkable figure now almost totally lost in time.

Lilly was an extremely bright and highly rational person yet he became convinced of the reality of his extraterrestrial membership in a future civilization and he went into a 6 week depression after a ketamine trip in which they showed him the collapse of the universe.

It was clear to him that the phenomena of the mind were capable of scientific study but this was quite heretical 40 years ago. What a great pity that he never delved into Wittgenstein's philosophy nor became acquainted with Osho!

Some of his books like "The Scientist" end with reprints of some of his papers and poems. The best site is http://www.johnclilly.com.

SUICIDAL UTOPIAN DELUSIONS

The Transient Suppression of the Worst Devils of our Nature—a review of Steven Pinker's 'The Better Angels of Our Nature: Why Violence Has Declined'(2012)

Michael Starks

ABSTRACT

This is not a perfect book, but it is unique, and if you skim the first 400 or so pages, the last 300 (of some 700) are a pretty good attempt to apply what's known about behavior to social changes in violence and manners over time. The basic topic is: how does our genetics control and limit social change? Surprisingly he fails to describe the nature of kin selection (inclusive fitness) which explains much of animal and human social life. He also (like nearly everyone) lacks a clear framework for describing the logical structure of rationality (LSR—John Searle's preferred term) which I prefer to call the Descriptive Psychology of Higher Order Thought (DPHOT). He should have said something about the many other ways of abusing and exploiting people and the planet, since these are now so much more severe as to render other forms of violence irrelevant. Extending the concept of violence to include the global long term consequences of replication of someone's genes, and having a grasp of the nature of how evolution works (i.e., kin selection) will provide a very different perspective on history, current events, and how things are likely to go in the next few hundred years. One might start by noting that the decrease in physical violence over history has been matched (and made possible) by the constantly increasing merciless rape of the planet (i.e., by people's destruction of their own descendant's future). Pinker (like most people most of the time) is often distracted by the superficialities of culture when it's biology that matters. See my recent reviews of Wilson's 'The Social Conquest of Earth' and Nowak and Highfield's 'SuperCooperators' here and on the net for a brief summary of the vacuity of altruism and the operation of kin selection and the uselessness and superficiality of describing behavior in cultural terms.

This is the classic nature/nurture issue and nature trumps nurture --infinitely. What really matters is the violence done to the earth by the relentless increase in population and resource destruction (due to medicine and technology and conflict suppression by police and military). About 200,000 more people a day (another Las Vegas every 10 days, another Los Angeles every month), the 12 tons or so of topsoil going into the sea/person/year –about 1% of the world's total disappearing yearly, etc. mean that unless some miracle happens the biosphere and civilization will largely collapse in the next two centuries and there will be starvation, misery and violence of every kind on a staggering scale. People's manners, opinions and tendencies to commit violent acts are of no relevance unless they can do something to avoid this catastrophe, and I don't see how that is going to happen. There is no space for arguments, and no point either (yes, I'm a fatalist), so I'll just make a few comments as though they were facts. Don't imagine I have a personal stake in promoting one group at the expense of others. I am 75, have no descendants and no close relatives and do not identify with any political, national or religious group and regard the ones I belong to by default as just as repulsive as all the rest.

Parents are the worst Enemies of Life on Earth and, taking the broad view of things, women are as violent as men when one considers the fact that women's violence (like most of that done by men) is largely done in slow motion, at a distance in time and space and mostly carried out by proxy -by their descendants and by men. Increasingly, women bear children regardless of whether they have a mate and the effect of stopping one woman from breeding is on average much greater than stopping one man, since they are the reproductive bottleneck. One can take the view that people and their offspring richly deserve whatever misery comes their way and (with rare exceptions) the rich and famous are the worst offenders. Meryl Streep or Bill Gates and each of their kids may destroy 50 tons of topsoil each per year for generations into the future, while an Indian farmer and his may destroy 1 ton. If someone denies it that's fine, and to their descendants I say "Welcome to Hell on Earth"(WTHOE).

The emphasis nowadays is always on Human Rights, but it is clear that if civilization is to stand a chance, Human Responsibilities must replace Human

Rights. Nobody gets rights without being a responsible citizen and the first thing this means is minimal environmental destruction. The most basic responsibility is no children unless your society asks you to produce them. A society or a world that lets people breed at random will always be exploited by selfish genes until it collapses (or reaches a point where life is so horrific it's not worth living). If society continues to maintain Human Rights as primary, that's fine and to their descendants one can say with confidence "WTHOE".

Those wishing a comprehensive up to date framework for human behavior from the modern two systems view may consult my art The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle (2017). Those interested in more of my writings may see Suicidal Utopian Delusions in the 21st Century (2017)

This is not a perfect book, but it is unique, and if you skim the first 400 or so pages, the last 300 (of some 700) are a pretty good attempt to apply what's known about behavior to social changes in violence and manners over time. The basic topic is: how does our genetics control and limit social change? Surprisingly he fails to describe the nature of kin selection (inclusive fitness) which explains much of animal and human social life. He also (like nearly everyone) lacks a clear framework for describing the logical structure of rationality (LSR—John Searle's preferred term) which I prefer to call the Descriptive Psychology of Higher Order Thought (DPHOT). Mostly the criticisms given by others are nit-picking and irrelevant and, as Pinker has said, he could not write a coherent book about "bad things", nor could he give every possible reference and point of view, but he should have said at least something about the many other ways of abusing and exploiting people and the planet, since these are now so much more severe as to render other forms of violence irrelevant.

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"Helping" has to be seen from a global long term perspective. Almost all "help" that's given by individuals, organizations or countries harms others and the world in the long run and must only be given after very careful consideration. If you want to hand out money, food, medicine, etc., you need to ask what the long term environmental consequences are. If you want to please everyone all the time, that's fine and again to your descendants I say "WTHOE".

Dysgenics: endless trillions of creatures beginning with bacteria-like forms over 3 billion years ago have died to create us and all current life and this is called eugenics, evolution by natural selection or kin selection (inclusive fitness). We all have "bad genes" but some are worse than others. It is estimated that up to 50% of all human conceptions end in spontaneous

abortion due to "bad genes". Civilization is dysgenic. This problem is currently trivial compared to overpopulation but getting worse by the day. Medicine, welfare, democracy, equality, justice, human rights and "helping" of all kinds have global long term dysgenic consequences which will collapse society even if population growth stops. Again, if the world refuses to believe it or doesn't want to deal with it that's fine and to their (and everyone's) descendants we can say "WTHOE".

Beware the utopian scenarios that suggest doomsday can be avoided by judicious application of technologies. As they say you can fool some of the people all of the time and all of the people some of the time but you can't fool mother nature any of the time. I leave you with just one example. Famous scientist Raymond Kurzweil proposed nanobots as the saviors of humankind. They would make anything we needed and clean every mess. They would even make ever better versions of themselves. They would keep us as pets. But think of how many people treat their pets, and pets are overpopulating and destroying and becoming dysgenic almost as fast as humans (e.g. feral cats alone kill perhaps 100 billion wild animals a year). Pets only exist because we destroy the earth to feed them and we have spay and neuter clinics and euthanize the sick and unwanted ones. We practice rigorous population control and eugenics on them deliberately and by omission, and no form of life can evolve or exist without these two controls—not even bots. And what's to stop nanobots from evolving? Any change that facilitated reproduction would automatically be selected for and any behavior that wasted time or energy (i.e., taking care of humans) would be heavily selected against. What would stop the bots program from mutating into a homicidal form and exploiting all earth's resources causing global collapse? There is no free lunch for bots either and to them too we can confidently say "WTHOE".

This is where any thoughts about the world and human behavior must lead an educated person but Pinker says nothing about it. So, the first 400 pages of this book can be skipped and the last 300 read as a nice summary of EP (evolutionary psychology) as of 2011. However, as in his other books and nearly universally in the behavioral sciences, there is no clear broad framework for intentionality as pioneered by Wittgenstein, Searle and many

others. I have presented such a framework in my many reviews of works by and about these two natural psychological geniuses and will not repeat it here.

The Dead Hands of Group Selection and Phenomenology Destroy a Book and a Career -- A Review of Individuality and Entanglement by Herbert Gintis (2017)

Michael Starks

ABSTRACT

Since Gintis is a senior economist and I have read some of his previous books with interest, I was expecting some more insights into behavior. Sadly, he makes the dead hands of group selection and phenomenology into the centerpieces of his theories of behavior, and this largely invalidates the work. Worse, since he shows such bad judgement here, it calls into question all his previous work. The attempt to resurrect group selection by his friends at Harvard, Nowak and Wilson, a few years ago was one of the major scandals in biology in the last decade, and I have recounted the sad story in my article 'Altruism, Jesus and the End of the World—how the Templeton Foundation bought a Harvard Professorship and attacked Evolution, Rationality and Civilization -- A review of E.O. Wilson 'The Social Conquest of Earth' (2012) and Nowak and Highfield 'SuperCooperators' (2012).' Unlike Nowak, Gintis does not seem to be motivated by religious fanaticism, but by the strong desire to generate an alternative to the grim realities of human nature, made easy by the (near universal) lack of understanding of basic human biology and blank slateism of behavioral scientists, other academics, and the general public.

Gintis rightly attacks (as he has many times before) economists, sociologists and other behavioral scientists for not having a coherent framework to describe behavior. Of course, the framework needed to understand behavior is an evolutionary one. Unfortunately, he fails to provide one himself (according to his many critics and I concur), and the attempt to graft the rotten corpse of group selection onto whatever economic and psychological theories he has generated in his decades of work, merely invalidates his entire project.

Although Gintis makes a valiant effort to understand and explain the genetics, like Wilson and Nowak, he is far from an expert, and like them, the math just blinds him to the biological impossibilities and of course this is the norm in science. As Wittgenstein famously noted on the first page of Culture and Value "There is no religious denomination in which the misuse of metaphysical expressions has been responsible for so much sin as it has in mathematics."

It has always been crystal clear that a gene that causes behavior which decreases its own frequency cannot persist, but this is the core of the notion of group selection. Furthermore, it has been well known and often demonstrated that group selection just reduces to inclusive fitness (kin selection), which, as Dawkins has noted, is just another name for evolution by natural selection. Like Wilson, Gintis has worked in this arena for about 50 years and still has not grasped it, but after the scandal broke, it took me only 3 days to find, read and understand the most relevant professional work, as detailed in my article. It is mind boggling to realize that Gintis and Wilson were unable to accomplish this in nearly half a century.

I discuss the errors of group selection and phenomenology that are the norm in academia as special cases of the near universal failure to understand human nature that are destroying America and the world.

Those wishing a comprehensive up to date framework for human behavior from the modern two systems view may consult my book 'The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle' (2017). Those interested in more of my writings may see 'Talking Monkeys--Philosophy, Psychology, Science, Religion and Politics on a Doomed Planet--Articles and Reviews 2006-2017'(2017).

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In the years after the Nowak, Wilson, Tarnita paper was published in Nature, several population geneticists recounted chapter and verse on the subject, again showing conclusively that it is all a storm in a teacup. It is most unfortunate that Gintis, like his friends, failed to ask a competent biologist about this and regards as misguided the 140 some wel- known biologists who a signed a letter protesting the publication of this nonsense in Nature. I refer those who want the gory details to my paper, as it's the best account of the melee that I am aware of. For a summary of the tech details see Dawkins Article The Descent of Edward Wilson http://www.prospectmagazine.co.uk/magazine/edward-wilson-social-conquest-earth-evolutionary-errors-origin-species. As Dawkins wrote 'For Wilson not to acknowledge that he speaks for himself against the great majority of his professional colleagues is—it pains me to say this of a lifelong hero —an act of wanton arrogance'. Sadly, Gintis has assimilated himself to such inglorious company. There are also some nice Dawkins youtubes such as https://www.youtube.com/watch?v=lBweDk4ZzZ4.

Gintis has also failed to provide the behavioral framework lacking in all the social sciences. One needs to have a logical structure for rationality, an understanding of the two systems of thought (dual process theory), of the division between scientific issues of fact and philosophical issues of how language works in the context at issue, and of how to avoid reductionism and scientism, but he, like nearly all students of behavior, is largely clueless. He, like them, is enchanted by models, theories, and concepts, and the urge to explain, while Wittgenstein showed us that we only need to describe, and that theories, concepts etc., are just ways of using language (language games) which have value only insofar as they have a clear test (clear truthmakers, or as eminent philosopher John Searle likes to say, clear Conditions of Satisfaction (COS)).

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After half a century in oblivion, the nature of consciousness (intentionality, behavior) is now the hottest topic in the behavioral sciences and philosophy. Beginning with the pioneering work of Ludwig Wittgenstein from 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)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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 Prior Intentions

*** Searle's Intention In Action

**** Searle's Direction of Fit

***** Searle's Direction of Causation

****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly called this causally self- referential.

*******Tversky/Kahneman/Frederick/Evans/Stanovich defined cognitive systems.

******** Here and Now or There and Then

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.

Gintis starts making dubious, vague or downright bizarre claims early in the book. It begins on the first page of the overview with meaningless quotes from Einstein and Ryle. On pxii the paragraph beginning 'Third Theme' about entangled minds needs rewriting to specify that language games are functions of System 2 and that's how thinking, believing etc. work (what they are), while the Fourth Theme which tries to explain behavior as due to what people 'consciously believe' is right. That is, with 'nonconsequentialism' he's trying to 'explain' behavior as 'altruistic' group selection mediated by conscious linguistic System 2. But if we take an evolutionary long term view, it's clearly due to reciprocal altruism, attempting to serve inclusive fitness, which is mediated by the unconscious operation of System 1. Likewise, for the Fifth Theme and the rest of the Overview. He favors Rational Choice but has no idea this is a language game for which the exact context must be specified, nor that both System 1 and System 2 are 'rational' but in quite different ways. This is the classic error of most descriptions of behavior, which Searle has called The Phenomenological Illusion, Pinker the Blank Slate and Tooby and Cosmides 'The Standard Social Science Model') and I have discussed it extensively in my other reviews and articles. As long as one does not grasp that most of our behavior is automated by nonlinguistic System 1, and that our conscious linguistic System 2 is mostly for rationalization of our compulsive and unconscious choices, it is not possible to have more than a very superficial view of behavior, i.e., the one that is nearly universal, not only among academics but politicians, billionaire owners of high tech companies, movie stars and the general public. Consequently, the consequences reach far beyond academia, producing

delusional social policies that are bringing about the inexorable collapse of industrial civilization. See my 'Suicide by Democracy-an Obituary for America and the World'. It is breathtaking to see America and the European democracies helping citizens of the third world destroy everyone's future.

On pxiii one can describe the 'nonconsequentialist' (i.e., apparently 'true' altruistic or self- destructive behavior) as actually performing reciprocal altruism, serving inclusive fitness due to genes evolved in the EEA (Environment of Evolutionary Adaptation—i.e., that of our very distant ancestors), which stimulates the dopaminergic circuits in the ventral tegmentum and the nucleus accumbens, with the resulting release of dopamine which makes us feel good—the same mechanism that appears to be involved in all addictive behavior from drug abuse to soccer moms.

And more incoherent babble such as "In the context of such environments, there is a fitness benefit to the 'epigenetic transmission' of such 'information' concerning the 'current state' of the 'environment', i.e., transmission through non-genetic 'channels'. This is called 'cultural transmission'" [scare quotes mine]. Also, that 'culture' is 'directly encoded' in the brain (p7), which he says is the main tenet of gene-culture coevolution, and that democratic institutions and voting are altruistic and cannot be explained in terms of self-interest (p17-18). The major reason for these peculiar views does not really come out until p186 when he finally makes it clear that he is a group selectionist. Since there is no such thing as group selection apart from inclusive fitness, it's no surprise that this is just another incoherent account of behavior—i.e., more or less what Tooby and Cosmides famously termed The Standard Social Science Model or Pinker 'The Blank Slate'.

What he calls 'altruistic genes' on p188 should be called 'inclusive fitness genes' or 'kin selection genes'. Gintis is also much impressed with the idea of gene-culture coevolution, which only means that culture may itself be an agent of natural selection but he fails to grasp that this can only happen within the context of natural selection (inclusive fitness). Like nearly all social scientists (and scientists, philosophers etc.), it never crosses his mind that 'culture', 'coevolution',' symbolic',' 'epigenetic', 'information',

'representation' etc., are all families of complex language games, whose COS (Conditions Of Satisfaction, tests for truth) are exquisitely sensitive to context. Without a specific context, they don't mean anything. So, in this book, as in most of the literature on behavior, there is much talk that has the appearance of sense without sense (meaning or clear COS).

His claim on pxv, that most of our genes are the result of culture, is clearly preposterous as e.g., it is well known that we are about 98% chimpanzee. Only if he means those relating to language can we accept the possibility that some of our genes have been subject to cultural selection and even these merely modified ones that already existed—i.e., a few base pairs were changed out of hundreds of thousands or millions in each gene.

He is much taken with the 'rational actor' model of economic behavior. but again, is unaware that the automaticities of S1 underlie all 'rational' behavior and the conscious linguistic deliberations of S2 cannot take place without them. Like many, perhaps the vast majority of current younger students of behavior, I see all human activities as easily comprehensible results of the working of selfish genetics in a contemporary context in which police surveillance and a temporary abundance of resources gotten by raping the earth and robbing our own descendants leads to relative temporary tranquility. In this connection, I suggest my review of Pinker's recent book—The Transient Suppression of the Worst Devils of Our Nature—A Review of The Better Angels of Our Nature'.

Many behaviors look like true altruism, and some are (i.e., they will decrease the frequency of the genes that bring them about – i.e, lead to the extinction of their own descendants), but the point which Gintis misses is that these are due to a psychology which evolved long ago in small groups on the African plains in the EEA and made sense then (i.e., it was inclusive fitness, when everyone in our group of a few dozen to a few hundred were our close relatives), and so we often continue with these behaviors even though they no longer make sense (i.e., they serve the interests of unrelated or distantly related persons which decreases our genetic fitness by decreasing the frequency of the genes that made it possible). This accounts for his promoting

the notion that many behaviors are 'truly altruistic', rather than selfish in origin (such as in sect. 3.2). He even notes this and calls it 'distributed effectivity' (p60-63) in which people behave in big elections as though they were small ones, but he fails to see this is not due to any genes for 'true altruism' but to genes for reciprocal altruism (inclusive fitness), which is of course selfish. Thus, people behave as though their actions (e.g., their votes) were consequential, even though it is clear that they are not. E.g., one can find on the net that the chances of any one person's vote deciding the outcome of an American presidential election is in the range of millions to tens of millions to one. And of course, the same is true of our chances of winning a lottery, yet our malfunctioning EEA psychology makes lotteries and voting hugely popular activities.

He also seems unaware of the standard terminology and ways of describing behavior used in evolutionary psychology (EP). E.g., on pg. 75 Arrow's description of norms of social behavior are described in economic terms rather than as EP from the EEA trying to operate in current environments, and at the bottom of the page, people act not as 'altruistic' punishers (i.e., as 'group selectionists') but as inclusive fitness punishers. On p 78, to say that subjects act 'morally' or in accord with a norm 'for its own sake', is again to embrace the group selectionist/phenomenological illusion, and clearly it is groups of genes that are trying to increase their inclusive fitness via well-known EP mechanisms like cheater detection and punishment. Again, on p88, what he describes as other-regarding unselfish actions can just as easily be described as self-regarding attempts at reciprocal altruism which go astray in a large society.

Naturally, he often uses standard economics jargon such as 'the subjective prior must be interpreted as a conditional probability', which just means a belief in the likelihood of a particular outcome (p90-91), and 'common subjective priors' (shared beliefs) p122. Much of the book and of behavior concerns what is often called 'we intentionality' or the construction of social reality, but the most eminent theorist in this arena, John Searle, is not discussed, his now standard terminology such as COS and DIRA (desire independent reasons for action) does not appear, he is not in the index, and

only one of his many works, and that over 20 years old, is found in the bibliography.

On p97 he comments favorably on Bayesian updating without mentioning that it is notorious for lacking any meaningful test for success (i.e., clear COS), and commonly fails to make any clear predictions, so that no matter what people do, it can describe their behavior after the fact.

However, the main problem with chapter 5 is that 'rational' and other terms are complex language games that have no meaning apart from very specific contexts, which are typically lacking here. Of course, as Wittgenstein showed us, this is the core problem of all discussion of behavior and Gintis has most of the behavioral science community (or at least most of those over 40) as coconspirators. Likewise, throughout the book, such as chapter 6, where he discusses 'complexity theory', 'emergent properties', 'macro and micro levels', and 'nonlinear dynamical systems' and the generation of 'models' (which can mean almost anything and 'describe' almost anything), but it's only prediction that counts (i.e., clear COS).

In spite of his phenomenological illusion (i.e., the near universal assumption that our conscious deliberations describe and control behavior—at odds with almost all the research in social psychology for the last 40 years), he also shares the reductionist delusion, wondering why the social sciences have not got a core analytical theory and have not coalesced. This of course is a frequent subject in the social sciences and philosophy and the reason is that psychology of higher order thought is not describable by causes, but by reasons, and one cannot make psychology disappear into physiology nor physiology into biochemistry nor it into physics etc. They are just different and indispensable levels of description. Wittgenstein famously described it 80 years ago in the Blue Book.

"Our craving for generality has [as one] source … our preoccupation with the method of science. I mean the method of reducing the explanation of natural phenomena to the smallest possible number of primitive natural laws; and, in mathematics, of unifying the treatment of different topics by using a generalization. Philosophers constantly see the method of science before their eyes, and are irresistibly tempted to ask and answer in the way science does. This tendency is the real source of metaphysics, and leads the philosopher into complete darkness. I want to say here that it can never be our job to reduce anything to anything, or to explain anything. Philosophy really is "purely descriptive."

He is also quite out of touch with the contemporary world, thinking that people are going to be nice because they have internalized altruism (i.e., group selection), and with demographic realities, when he opines that population growth is under control, when in fact predictions are for another 4 billion by 2100 (p133).

He sees a need to "carve an academic niche for sociology" (p148), but the whole discussion is typical gibberish (no clear COS), and all one really needs (or can give) is a clear description of the language games (the mind at work) we play in social situations, and how they show how our attempts at inclusive fitness work or go astray in contemporary contexts. Over and over he pushes his fantasy that "inherently ethical behavior" (i.e., group selectionist altruism) explains our social behavior, ignoring the obvious facts that it's due to temporary abundance of resources, police and surveillance, and that always when you take these away, savagery quickly emerges (e.g., p151). It's easy to maintain such delusions when one lives in the ivory tower world of abstruse theories, inattentive to the millions of scams, robberies, rapes, assaults, thefts and murders taking place every day.

Again, and again, (e.g., top p170) he ignores the obvious explanations for our 'rationality', which is natural selection –i.e., inclusive fitness in the EEA leading to ESS (Evolutionarily Stable Strategies), or at least they were more or less stable in small groups 100,000 to 3 million years ago.

Chapter 9 on the Sociology of the Genome is inevitably full of mistakes and incoherence—e.g., there are not special 'altruistic genes', rather, all genes serve inclusive fitness or they disappear (p188). The problem is that the only way to really get selfish genetics and inclusive fitness across is to have Gintis in a room for a day with Dawkins, Franks, Coyne etc., explaining why it is wrong. But as always, one has to have a certain level of education, intelligence, rationality and honesty for this to work, and if one is just a little bit short in several categories, it will not succeed. The same of course is true for much of human understanding, and so the vast majority will never get anything that is at all subtle. As with the Nowak, Wilson, Tarnita paper, I am sure that Dawkins, Franks and others would have been willing to go over this chapter and explain where it goes astray, but wanton arrogance is an absolute barrier to truth.

The major problem is that people just do not grasp the concept of natural selection by inclusive fitness nor of subconscious motivations, and that many have 'religious' motivations for rejecting them. This includes not just the general public and non-science academics, but a large percentage of biologists and behavioral scientists. I recently came across a lovely review by Dawkins of a discussion of the selfish gene idea by top level professional biologists, in which he had to go over their work line by line to explain that they just did not grasp how it all works. But only a small number of people like him could do this, and the sea of confusion is vast, and so these delusions about human nature that destroy this book, and are destroying America and the world will, as the Queen said to Alice in a slightly different context, go on until they come to the end and then stop.

Is JK Rowling More Evil Than Me?

Michael Starks

ABSTRACT

How about a different take on the rich and famous? First the obvious—the Harry Potter novels are primitive superstition that encourages children to believe in fantasy rather than take responsibility for the world-- the norm of course. JKR is just as clueless about herself and the world as all the other monkeys, but about 200 times as destructive as the average American and about 800 times more than the average Chinese. She has been responsible for the destruction of maybe 30,000 hectares of forest to produce these trash novels and all the erosion ensuing (not trivial as its ca. 12 tons/year soil into the ocean for everyone on earth or maybe 100 tons per American, and so about 5000 tons/year for Rowling's books and movies and her 3 children). The earth loses about 1% of its topsoil every year, so as it nears 2100, most of its food growing capacity will be gone. Then there is the huge amount of fuel burned and waste made to make and distribute the books and films, plastic dolls etc. She shows her lack of social responsibility by producing children rather than using her millions to encourage family planning or buy up the rain forest, and by promoting the conventional liberal stupidity of 3rd world supremacy that is destroying Britain, America, the world and her descendant's future. Of course, she's not that different from the other 7.7 billion clueless - just noisier and more destructive

It is the no free lunch problem writ large. The mob just can't see that there is no such thing as helping one person without harming others. Rights or privileges given to new entrants into an overcrowded world can only diminish those of others. In spite of the massive ecological disasters happening in front of them everywhere every day, they can't pin them to the unrestrained motherhood of "the diverse", which accounts for most of the population increase of the last century and all of that in this one. They lack some combination of intelligence, education, experience and sanity required to extrapolate the daily assaults on the resources and functioning of society to the eventual collapse of industrial civilization. Each meal, each trip by car

or bus, each pair of shoes is another nail in the earth's coffin. It has likely never crossed her mind that one seat on a plane from London to San Francisco produces about one ton of carbon which melts about 3 square meters of sea ice and as one of the overprivileged she has probably flown hundreds of such flights.

Not only the rich and famous, but nearly any public figure at all, including virtually all teachers, are pressured to be politically correct, which in the Western Democracies, now means social democratic (diluted communist) third world supremacists working for the destruction of their own societies and their own descendants. So, those whose lack of free speech (and basic common sense), which should prohibit them from making any public statements at all, totally dominate all the media, creating the impression that the intelligent and civilized must favor democracy, diversity and equality, while the truth is that these are the problems and not the solutions, and that they themselves are the prime enemies of civilization.

How about a different take on the rich and famous? First the obvious—the Harry Potter novels are primitive superstition that encourages children to believe in fantasy rather than take responsibility for the world-- the norm of course. JKR is just as clueless about herself and the world as all the other monkeys, but about 200 times as destructive as the average American and about 800 times more than the average Chinese. She has been responsible for the destruction of maybe 30,000 hectares of forest to produce these trash novels and all the erosion ensuing (not trivial as its ca. 12 tons/year soil into the ocean for everyone on earth or maybe 100 tons per American, and so about 5000 tons/year for Rowling's books and movies and her 3 children). The earth loses at least 1% of its topsoil (and most estimates are closer to 2%) every year, so as it nears 2100, most of its food growing capacity will largely be gone. Then there is the huge amount of fuel burned and waste made to make and distribute the books and films, plastic dolls etc. She shows her lack of social responsibility by producing children rather than using her millions to encourage family planning or buy up the rain forest, and by promoting the conventional liberal stupidity of 3rd world supremacy that is destroying Britain, America, the world and her descendant's future. Of course, she's not

that different from the other 7.7 billion clueless - just noisier and more destructive.

Like all the rich, she is able to multiply her destruction by causing others to destroy on her behalf. Each child she produced results in about 50 tons of topsoil into the ocean, 300 lbs of toxic chemicals produced, 1 acre of forest/wetland/ gone forever, every year. Like all people, her family steals from all people on the earth and from their own descendants (no human rights without human wrongs), and, like the vast majority, she is poorly educated, egomaniacal, and lacking self-awareness, so these issues never cross her mind. In addition to the material destruction to make and distribute her books and movies, there is the vast amount of time wasted in reading and viewing them. In addition, the extreme immaturity shown by the characters in them and their preoccupation with infantile superstitious fantasies can only do harm to impressionable minds. The world would be a better place if she had never been born, but one can say it of nearly everyone.

It has long been the understanding of spiritually aware people that all but a tiny number of us spend their whole lives asleep, and this view is powerfully supported by modern psychological research, which shows that nearly all our actions are done mechanically, for reasons of which we are not aware and over which we have no control. Our personality is an illusion produced by evolution to ensure reproduction. We are only a package for selfish genes carrying out their blind programs and, like all organisms, we live to replicate our genes and to accumulate and consume resources to that end. In our case that means we live to destroy the earth and our own descendants. It is essential to this game that we remain unaware of it, for, to the extent we become aware and live our lives as conscious beings, we diminish our reproduction and the genes which produce this behavior are selected against.

Rowling is a typical example of a seemingly intelligent aware person who will walk through their whole life sound asleep—just like nearly all of the other 11 billion (I extrapolate to 2100) —and like them, lives only to destroy the earth and to leave her toxic offspring behind to continue the destruction. Like so many, she, with Obama and the Pope, share the common delusion

that the poor are more noble and deserving, but the rich differ only in having the chance to be more destructive. The poor are the rich in waiting. So 800 Chinese or Indians do about as much damage as JKR and her family. Rich or poor they do the only things monkeys can do - consume resources and replicate their genes until the collapse of industrial civilization about the middle of the next century. In the blink of an eye, centuries and millennia will pass and, in the hellish world of starvation, disease, war and violence that their ancestors created, nobody will know or care that any of them existed. She is no more inherently evil than others, but also no better and, due to the accidents of history, she is high on the list of Enemies of Life on Earth.

It is the no free lunch problem writ large. The mob just can't see that there is no such thing as helping one person without harming others. Rights or privileges given to new entrants into an overcrowded world can only diminish those of others. In spite of the massive ecological disasters happening in front of them everywhere everyday, they can't pin them to the unrestrained motherhood of "the diverse", which accounts for most of the population increase of the last century and all of that in this one. They lack some combination of intelligence, education, experience and sanity required to extrapolate the daily assaults on the resources and functioning of society now to the eventual collapse of industrial civilization, as well as the courage to say so even if they do realize it. Each meal, each trip by car or bus, each pair of shoes is another nail in the earth's coffin. It has likely never crossed her mind that one seat on a plane from London to San Francisco produces about one ton of carbon which melts about 3 square meters of sea ice and as one of the overprivileged she has probably flown hundreds of such flights.

It never crosses their minds that the average lower class family of 4 take out in goods, services, and infrastructure costs perhaps $50,000 more every year than they contribute, and in 100 years (when it will have expanded to perhaps 10 people) will have cost the country about $15 million, and immeasurably more in long term ecological and social costs (what is the value for the collapse of civilization?).

Not only the rich and famous, but nearly any public figure at all, including virtually all teachers, are pressured to be politically correct, which in the Western Democracies, now means social democratic (diluted communist) third world supremacists working for the destruction of their own societies and their own descendants. So, those whose lack of free speech (and basic common sense), which should prohibit them from making any public statements at all, totally dominate all the media, creating the impression that the intelligent and civilized must favor democracy, diversity and equality, while the truth is that these are the problems and not the solutions, and that they themselves are the prime enemies of civilization.

America and the world are in the process of collapse from excessive population growth, most of it for the last century and now all of it due to 3rd world people. Consumption of resources and the addition of 4 billion more ca. 2100 will collapse industrial civilization and bring about starvation, disease, violence and war on a staggering scale. Billions will die and nuclear war is all but certain. In America, this is being hugely accelerated by massive immigration and immigrant reproduction, combined with abuses made possible by democracy. Depraved human nature inexorably turns the dream of democracy and diversity into a nightmare of crime and poverty. China will continue to overwhelm America and the world, as long as it maintains the dictatorship which limits selfishness. The root cause of collapse is the inability of our innate psychology to adapt to the modern world, which leads people to treat unrelated persons as though they had common interests. This, plus ignorance of basic biology and psychology, leads to the social engineering delusions of the partially educated who control democratic societies. Few understand that if you help one person you harm someone else—there is no free lunch and every single item anyone consumes destroys the earth beyond repair. Consequently, social policies everywhere are unsustainable and one by one all societies without stringent controls on selfishness will collapse into anarchy or dictatorship. Without dramatic and immediate changes, there is no hope for preventing the collapse of America, or any country that follows a democratic system.

Those who want a broader framework may see my essay 'Suicide by Democracy' at the end of this volume.

A Review of The Murderer Next Door by David Buss (2005)

Michael Starks

ABSTRACT

Though this volume is a bit dated, there are few recent popular books dealing specifically with the psychology of murder and it's a quick overview available for a few dollars, so still well worth the effort. It makes no attempt to be comprehensive and is somewhat superficial in places, with the reader expected to fill in the blanks from his many other books and the vast literature on violence. For an update see e.g., Buss, The Handbook of Evolutionary Psychology 2nd ed. V1 (2016) p 265, 266, 270–282, 388–389, 545–546, 547, 566 and Buss, Evolutionary Psychology 5th ed. (2015) p 26, 96–97,223, 293-4, 300, 309–312, 410 and Shackelford and Hansen, The Evolution of Violence (2014). He has been among the top evolutionary psychologists for several decades and covers a wide range of behavior in his works, but here he concentrates almost entirely on the psychological mechanisms that cause individual people to murder and their possible evolutionary function in the EEA (Environment of Evolutionary Adaptation—i.e., the plains of Africa during the last million years or so).

Buss starts by noting that as with other behaviors, 'alternative' explanations such as psychopathology, jealousy, social environment, group pressures, drugs and alcohol etc. do not really explain, since the question still remains as to why these produce homicidal impulses, i.e., they are the proximate causes and not the ultimate evolutionary (genetic) ones. As always, it inevitably boils down to inclusive fitness (kin selection), and so to the struggle for access to mates and resources, which is the ultimate explanation for all behavior in all organisms. Sociological data (and common sense) make it clear that younger poorer males are the most likely to kill. He presents his own and others homicide data from industrialized nations, and tribal cultures, conspecific killing in animals, archeology, FBI data and his own research into normal people's homicidal fantasies. Much archeological evidence continues to accumulate of murders, including that of whole groups, or of groups minus young females, in prehistoric times.

After surveying Buss's comments, I present a very brief summary of intentional psychology (the logical structure of rationality), which is covered extensively in my many other articles and books.

Those with a lot of time who want a detailed history of homicidal violence from an evolutionary perspective may consult Steven Pinker's 'The Better Angels of Our Nature Why Violence Has Declined'(2012), and my review of it easily available on the net and in two of my recent ebooks. Briefly, Pinker notes that murder has decreased steadily and dramatically by a factor of about 30 since our days as foragers. So, even though guns now make it extremely easy for anyone to kill, homicide is much less common. Pinker thinks this is due to various social mechanisms that bring out our 'better angels', but I think it's due mainly to the temporary abundance of resources from the merciless rape of our planet, coupled with increased police presence, with communication and surveillance and legal systems that make it far more likely to be punished. This becomes clear every time there is even a brief and local absence of the police.

Those wishing a comprehensive up to date framework for human behavior from the modern two systems view may consult my book 'The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle' (2017). Those interested in more of my writings may see 'Talking Monkeys--Philosophy, Psychology, Science, Religion and Politics on a Doomed Planet--Articles and Reviews 2006-2017' (2017).

Buss starts by noting that as with other behaviors, 'alternative' explanations such as psychopathology, jealousy, social environment, group pressures, drugs and alcohol etc. do not really explain, since the question still remains as to why these produce homicidal impulses, i.e., they are the proximate causes and not the ultimate evolutionary (genetic) ones. As always, it inevitably boils down to inclusive fitness (kin selection), and so to the struggle for access to mates and resources, which is the ultimate explanation for all behavior in all organisms. Sociological data (and common sense) make it clear that younger poorer males are the most likely to kill. He presents his own and others homicide data from industrialized nations, and tribal cultures, conspecific killing in animals, archeology, FBI data and his own research into normal people's homicidal fantasies. Much archeological evidence continues to accumulate of murders, including that of whole groups, or of groups minus young females, in prehistoric times.

On p 12 he notes that the war between each individual and the world over resources begins at conception, when it begins growing by robbing its mother

of food and stressing her body, and when her system fights back with frequently fatal consequences for the conceptus. He does not tell us that estimates of spontaneous abortion are in the range of up to about 30% of all conceptions, so that as many as 80 million a year die, most so early that the mother does not even know she is pregnant, and perhaps her period is a bit late. This is part of nature's eugenics which we have not succeeded in defeating, though the overall dysgenic effect of civilization continues and each day the approx. 300,000 who are born are on average just slightly less mentally a physically fit than the approx. 100,000 who die, with a net increase in world population of ca. 200,000 and an ever larger 'unfit' population to destroy the earth (while being partly or wholely supported by their 'fit' neighbors).

On p13 he says that we don't know for sure that OJ Simpson was guilty but I would say that regardless of the trial we do know he was, as it's the only reasonable interpretation of the facts of the case, which include his bizarre behavior. Also, in the subsequent civil trial, where his multimillion dollar defense attorneys were not present to subvert justice, he was quickly convicted, which led to the attachment of his assets, his armed robbery conviction and imprisonment.

He notes on p20 that there were about 100 million known murders worldwide in the last 100 years, with maybe as many as 300 million if all the unreported were included. It is also to be kept in mind that America's murder rate is decreased by about 75% due to the world class medical system which saves most victims of attempts. I will add that Mexico has about 5X the murder rate of the USA and Honduras about 20X, and your descendants can certainly look forward to our rate moving in that direction due to America's fatal embrace of Diversity. Ann Coulter in 'Adios America'(2015) notes that Hispanics have committed about 23,000 murders here in the last few decades. For now, nothing will be done, and crime here will reach the levels in Mexico as the border continues to dissolve and environmental collapse and approaching bankruptcy dissolve the economy. Inside Mexico in 2014 alone, 100 U.S. citizens were known to have been murdered and more than 130 kidnapped and others just disappeared, and if you add other foreigners and Mexicans it runs into the thousands. See my article 'Suicide by Democracy' for further details.

Even a tiny lightly traveled country like Honduras manages some 10 murders and 2 kidnappings a year of US citizens. And these are the best of times—it is getting steadily worse as unrestrained motherhood and resource depletion bring collapse ever closer. In addition to continued increases in crime of all

kinds we will see the percentage of crimes solved drop to the extremely low levels of the third world. More resources are devoted to the solution of murders than any other crime and about 65% are solved in the USA, but in Mexico less than 2% are solved and as you get further from Mexico City the rate drops to near zero. Also note that the rate here used to be about 80%, but it has dropped in parallel with the increase in the Diverse. Also 65% is the average but if you could get statistics I am sure it would rise with the percent of Euro's in a city and drop as the percent of Diverse increases. In Detroit (83% black) only 30% are solved. If you keep track of who robs, rapes and murders, it's obvious that black lives matter lots more to Euros (those of European descent) than they do to other blacks. These are my observations.

Throughout history women have been at a major disadvantage when it came to murdering, but with the ready availability of guns we would expect this to change, but on p22 we find that about 87% of USA murderers are men and for same sex killing this rises to 95% and is about the same worldwide. Clearly something in the male psyche encourages violence as a route to fitness that is largely absent in women. Also relevant is that murders by acquaintances are more common than those by strangers.

On p37 he notes that with high likelihood of conviction, murder is now a more costly strategy than formerly, but I think this depends entirely on who you are. In a largely Euro USA city or among middle and upper class people, over 95% of murders might be solved, but in lower class cities maybe 20% might be, and for gang dominated areas even less than that. And in 3rd world countries the chances of justice are even lower, especially when committed by gang members, so it is a highly viable strategy, especially if planned ahead of time.

Next, he deals with violence and murder as a part of mating strategies, which they have clearly been throughout our evolution and remain so especially among the lower classes and in third world countries. He notes the frequent murder of wives or lovers by men during or after breakups. He comments in passing on mate selection and infidelity but there is minimal discussion as these topics are treated in great detail in his other writings and edited volumes. It is now well known that women tend to have affairs with sexy men that they would not select as a permanent partner (the sexy son theory) and to mate with them on their most fertile days. All these phenomena are viewed from an evolutionary perspective (i.e., what would the fitness advantage have been formerly).

There is very strong selection for behaviors that prevent a man from raising children fathered by someone else for the same reasons that 'group selection' is strongly selected against. However modern life provides ample opportunities for affairs, and genetic studies have shown that a high percentage of children are fathered by other than the permanent partner of their mother, with the percentage increasing from a few percent to as much as 30% as one descends from upper to lower classes in various modern Western countries at various periods. In his book Sperm Wars: The Science of Sex (2006) Robin Baker summarizes: 'Actual figures range from 1 percent in high-status areas of the United States and Switzerland, to 5 to 6 percent for moderate-status males in the United States and Great Britain, to 10 to 30 percent for lower-status males in the United States, Great Britain and France'. One might suppose that in societies where both men and women are highly concentrated in cities and have mobile phones, this percentage is rising, especially in the third world where use of birth control and abortion is erratic.

He finds that most men and women who murder their mates are young and the younger their mates are, the more likely they will be murdered. Like much of behavior, this is hard to explain without an evolutionary perspective. One study found men in their 40's constituted 23% of mate murderers but men in their 50's only 7.7%, and 79% of female mate killers where between 16 and 39. It makes sense that the younger they are, the bigger the potential fitness loss to the male (decreased reproduction) and so the more intense the emotional response. As Buss puts it: "From Australia to Zimbabwe, the younger the woman, the higher the likelihood that she will be killed as a result of a sexual infidelity or leaving a romantic relationship. Women in the 15 to 24 year old bracket are at the greatest risk." A high percentage are killed within two months of separation and most in the first year. One study found that 88% of them had been stalked prior to being killed. In ssome chapters there are quotes from people giving their feelings about their unfaithful mates and these typically include homicidal fantasies, which were more intense and went on for longer periods for men than for women.

He devotes some time to the increased risk of abuse and murder from having a stepparent with e.g., the risk to a girl of rape increasing about 10X if her father is a stepfather. It is now very well known that in a wide range of mammals, a new male encountering a female with young will attempt to kill them. One USA study found that if one or both parents are surrogates, this raises the child's chance of being murdered in the home between 40 and 100X (p174). A Canadian study found the beating death rate rose by 27X if one parent in a registered marriage was a stepparent while it rose over 200X if the

surrogate was a live-in boyfriend. Child abuse rates in Canada rose 40X when there was a stepparent.

In humans, being without resources is a strong stimulus for women to eliminate their existing children in order to attract a new mate. A Canadian study found that even though single women were only 12% of all mothers, they committed over 50% of infanticides (p169). Since younger women lose less fitness from an infant death than older ones, it is not surprising that a cross-cultural study found that teenagers killed their infants at rates about 30X that of women in their twenties (p170).

He then briefly discusses serial killers and serial rapists, the most successful of all time being the Mongols of Genghis Khan, whose Y chromosomes are represented in about 8% of all the men in the territories they controlled, or some 20 million men (and an equal number of women) or about half a percent of all the people on earth, which makes them easily the most genetically fit of all the people who have ever lived in historical times.

Though this volume is a bit dated, there are few recent popular books dealing specifically with the psychology of murder and it's a quick overview available for a few dollars, so still well worth the effort. It makes no attempt to be comprehensive and is somewhat superficial in places, with the reader expected to fill in the blanks from his many other books and the vast literature on violence. For an update see e.g., Buss, The Handbook of Evolutionary Psychology 2nd ed. V1 (2016) p 265, 266, 270–282, 388–389, 545–546, 547, 566 and Buss, Evolutionary Psychology 5th ed. (2015) p 26, 96–97,223, 293-4, 300, 309–312, 410 and Shackelford and Hansen, The Evolution of Violence (2014) He has been among the top evolutionary psychologists for several decades and covers a wide range of behavior in his works, but here he concentrates almost entirely on the psychological mechanisms that cause individual people to murder and their possible evolutionary function in the EEA (Environment of Evolutionary Adaptation—i.e., the plains of Africa during the last million years or so).

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angels', but I think it's due mainly to the temporary abundance of resources from the merciless rape of our planet, coupled with increased police presence, with communication and surveillance and legal systems that make it far more likely to be punished. This becomes clear every time there is even a brief and local absence of the police.

Others also take the view that we have a 'nice side' that is genetically innate and supports the favorable treatment of even those not closely related to us ('group selection'). This is hopelessly confused and I have done my small part to lay it to rest in 'Altruism, Jesus and the End of the World—how the Templeton Foundation bought a Harvard Professorship and attacked Evolution, Rationality and Civilization. A review of E.O. Wilson 'The Social Conquest of Earth' (2012) and Nowak and Highfield 'SuperCooperators'(2012)'.

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I now present a very brief summary of intentional psychology (the logical structure of rationality) which is covered extensively in my many other articles and books. Impulsive violence will involve the automated subcortical functions of System 1, but is sometimes deliberated upon ahead of time via cortical System 2.

About a million years ago primates evolved the ability to use their throat muscles to make complex series of noises (i.e., speech) that by about 100,000 years ago had evolved to describe present events (perceptions, memory, reflexive actions with basic utterances that can be described as Primary Language Games (PLG's) describing System 1—i.e., the fast unconscious automated System One, true-only mental states with a precise time and location). We gradually developed the further ability to encompass displacements in space and time to describe memories, attitudes and potential events (the past and future and often counterfactual, conditional or fictional preferences, inclinations or dispositions) with the Secondary Language Games (SLG's) of System Two- slow conscious true or false propositional attitudinal thinking, which has no precise time and are abilities and not mental states. Preferences are Intuitions, Tendencies, Automatic Ontological Rules, Behaviors, Abilities, Cognitive Modules, Personality

Traits, Templates, Inference Engines, Inclinations, Emotions, Propositional Attitudes, Appraisals, Capacities, Hypotheses.

Emotions are Type 2 Preferences (Wittgenstein RPP2 p148). "I believe", "he loves", "they think" are descriptions of possible public acts typically displaced in spacetime. My first-person statements about myself are true-only (excluding lying), while third person statements about others are true or false (see my review of Johnston - 'Wittgenstein: Rethinking the Inner').

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

INTENTIONALITY can be viewed as personality or as the Construction of Social Reality (the title of Searle's well known book) and from many other viewpoints as well.

Beginning with the pioneering work of Ludwig Wittgenstein in the 1930's (the Blue and Brown Books) and from the 50's to the present by his successors Searle, Moyal-Sharrock, Read, Baker, Hacker, Stern, Horwich, Winch, Finkelstein, Coliva etc., I have created the following table as an heuristic for furthering this study. The rows show various aspects or ways of studying and the columns show the involuntary processes and voluntary behaviors comprising the two systems (dual processes) of the Logical Structure of Consciousness (LSC), which can also be regarded as the Logical Structure of Rationality (LSR), of behavior (LSB), of personality (LSP), of Mind (LSM), of language (LSL), of reality (LSOR), of Intentionality (LSI) -the classical philosophical term, the Descriptive Psychology of Consciousness (DPC) , the

Descriptive Psychology of Thought (DPT) –or better, the Language of the Descriptive Psychology of Thought (LDPT), terms introduced here and in my other very recent writings.

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

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
Subliminal Effects	No	Yes/No	Yes	Yes	No	No	No	Yes/No
Associative/ Rule Based	RB	A/RB	A	A	A/RB	RB	RB	RB
Context Dependent/ Abstract	A	CD/A	CD	CD	CD/A	A	CD/A	CD/A
Serial/Parallel	S	S/P	P	P	S/P	S	S	S
Heuristic/ Analytic	A	H/A	H	H	H/A	A	A	A
Needs Working Memory	Yes	No	No	No	No	Yes	Yes	Yes
General Intelligence Dependent	Yes	No	No	No	Yes/No	Yes	Yes	Yes
Cognitive Loading Inhibits	Yes	Yes/No	No	No	Yes	Yes	Yes	Yes
Arousal Facilitates or Inhibits	I	F/I	F	F	I	I	I	I

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

** Searle's Prior Intentions

*** Searle's Intention In Action

**** Searle's Direction of Fit

***** Searle's Direction of Causation

****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly called this causally self- referential.

******* Tversky/Kahneman/Frederick/Evans/Stanovich defined cognitive systems.

******** Here and Now or There and Then

One should always keep in mind Wittgenstein's discovery that after we have described the possible uses (meanings, truthmakers, Conditions of Satisfaction) of language in a particular context, we have exhausted its interest, and attempts at explanation (i.e., philosophy) only get us further away from the truth. It is critical to note that this table is only a highly simplified context-free heuristic and each use of a word must be examined in

its context. The best examination of context variation is in Peter Hacker's recent 3 volumes on Human Nature, which provide numerous tables and charts that should be compared with this one.

Will Hominoids or Androids Destroy the Earth? —A Review of How to Create a Mind by Ray Kurzweil (2012)

Michael Starks

ABSTRACT

Some years ago, I reached the point where I can usually tell from the title of a book, or at least from the chapter titles, what kinds of philosophical mistakes will be made and how frequently. In the case of nominally scientific works these may be largely restricted to certain chapters which wax philosophical or try to draw general conclusions about the meaning or long term significance of the work. Normally however the scientific matters of fact are generously interlarded with philosophical gibberish as to what these facts mean. The clear distinctions which Wittgenstein described some 80 years ago between scientific matters and their descriptions by various language games are rarely taken into consideration, and so one is alternately wowed by the science and dismayed by its incoherent analysis. So, it is with this volume.

If one is to create a mind more or less like ours, one needs to have a logical structure for rationality and an understanding of the two systems of thought (dual process theory). If one is to philosophize about this, one needs to understand the distinction between scientific issues of fact and the philosophical issue of how language works in the context at issue, and of how to avoid the pitfalls of reductionism and scientism, but Kurzweil, like nearly all students of behavior, is largely clueless. He, is enchanted by models, theories, and concepts, and the urge to explain, while Wittgenstein showed us that we only need to describe, and that theories, concepts etc., are just ways of using language (language games) which have value only insofar as they have a clear test (clear truthmakers, or as John Searle (AI's most famous critic) likes to say, clear Conditions of Satisfaction (COS)). I have attempted to provide a start on this in my recent writings.

Those wishing a comprehensive up to date framework for human behavior from the modern two systems view may consult my book 'The Logical Structure of Philosophy, Psychology, Mind and Language in Ludwig Wittgenstein and John Searle' (2017). Those interested in socio-political issues may see Suicidal Utopian Delusions in the 21st Century (2017).

Also, as usual in 'factual' accounts of AI/robotics, he gives no time to the very real threats to our privacy, safety and even survival from the increasing 'androidizing' of society which is prominent in other authors (Bostrum, Hawking, etc.) and frequent in scifi and films, so I make a few comments on the quite possibly suicidal utopian delusions of 'nice' androids, humanoids, democracy, diversity, and genetic engineering.

I take it for granted that technical advances in electronics, robotics and AI will occur, resulting in profound changes in society. However, I think the changes coming from genetic engineering are at least as great and potentially far greater, as they will enable us to utterly change who we are. And it will be feasible to make supersmart/super strong servants by modifying our genes or those of other monkeys. As with other technology, any country that resists will be left behind. But will it be socially and economically feasible to implement biobots or superhumans on a massive scale? And even if so, it does not seem remotely possible, economically or socially to prevent the collapse of industrial civilization.

So, ignoring the philosophical mistakes in this volume as irrelevant, and directing our attention only to the science, what we have here is another suicidal utopian delusion rooted in a failure to grasp basic biology, psychology and human ecology, the same delusions that are destroying America and the world. I see a remote possibility the world can be saved, but not by AI/robotics, CRISPR, nor by democracy and equality.

Some years ago, I reached the point where I can usually tell from the title of a book, or at least from the chapter titles, what kinds of philosophical mistakes will be made and how frequently. In the case of nominally scientific works these may be largely restricted to certain chapters which wax

philosophical or try to draw general conclusions about the meaning or long term significance of the work. Normally however the scientific matters of fact are generously interlarded with philosophical gibberish as to what these facts mean. The clear distinctions which Wittgenstein described some 80 years ago between scientific matters and their descriptions by various language games are rarely taken into consideration, and so one is alternately wowed by the science and dismayed by its incoherent analysis. So, it is with this volume.

If one is to create a mind more or less like ours, one needs to have a logical structure for rationality and an understanding of the two systems of thought (dual process theory). If one is to philosophize about this, one needs to understand the distinction between scientific issues of fact and the philosophical issue of how language works in the context at issue, and of how to avoid the pitfalls of reductionism and scientism, but Kurzweil, like nearly all students of behavior, is largely clueless. He, is enchanted by models, theories, and concepts, and the urge to explain, while Wittgenstein showed us that we only need to describe, and that theories, concepts etc., are just ways of using language (language games) which have value only insofar as they have a clear test (clear truthmakers, or as John Searle (AI's most famous critic) likes to say, clear Conditions of Satisfaction (COS)).

Those wishing a comprehensive up to date framework for human behavior from the modern two systems view may consult my art The Logical Structure of Philosophy, Psychology, Mind and Language as Revealed in Ludwig Wittgenstein and John Searle (2017). Those interested in more of my writings may see 'Talking Monkeys--Philosophy, Psychology, Science, Religion and Politics on a Doomed Planet--Articles and Reviews 2006-2017'(2017).

Actually, "reduction" is a complex language game or group of games (uses of words with various meanings or COS) so its use varies greatly depending on context and often it's not clear what it means. Likewise, with modeling or simulating or reproducing or equivalent to or the same as etc. Likewise, with the claims here and everywhere that "computation" of biological or mental processes is not done as it would take too long but not computable or

calculable means many things or nothing at all depending on context and this is usually just totally ignored.

Chapter 9 is the typical nightmare one expects. Minsky's first quote "Minds are simply what brains do" is a truism in that in some games one can e.g., say 'my brain is tired' etc. but like most he has no grasp at all of the line between scientific questions and those about how the language games are to be played (how we can use language intelligibly). Descriptions of behavior are not the same as descriptions of brain processes. This 'reductionism' is a hopelessly bankrupt view of life, -- it just does not work, i.e., is not coherent, and this has been explained at length, first by Wittgenstein and subsequently by Searle, Hacker and many others. For one thing, there are various levels of description (physics, chemistry, biochemistry, genetics, neurophysiology, brain, thought/behavior) and the concepts (language games) useful and intelligible (having clear meaning or COS) at one level work differently at another. Also, one 'mental state', 'disposition' or 'thought' or 'action', can be described in first person or third person by many statements and vice versa, one statement may describe many different 'mental states', 'dispositions', 'thoughts' or 'actions' depending intricately on context, so the match between behavior and language is hugely underdetermined even for 'simple' acts or sentences. and as these become more complex there is a combinatorial explosion.

There is no clear meaning to describing my desire to see the sun set at the lower levels and their never will be. They are different levels of description, different concepts (different language games) and one cannot even make sense of reducing one to the other, of behavior into neurophysiology into biochemistry into genetics into chemistry into physics into math or computation and like most scientists Kurzweil's handwaving and claims that it's not done because its inconvenient or impractical totally fails to see that the real issue is that 'reduction' has no clear meaning (COS), or rather many meanings depending acutely on context, and in no case can we give a coherent account that eliminates any level.

Nevertheless, the rotting corpse of reductionism floats to the surface frequently (e.g., p37 and the Minsky quote on p199) and we are told that

chemistry "reduces" to physics and that thermodynamics is a separate science because the equations become "unwieldy", but another way to say this is that reduction is incoherent, the language games (concepts) of one level just do not apply (make sense) at higher and lower levels of description, and it is not that our science or our language is inadequate. I have discussed this in my other articles and it is well known in the philosophy of science, but it is likely never going to penetrate into "hard science".

The psychology of higher order thought is not describable by causes, but by reasons, and one cannot make psychology disappear into physiology nor physiology into biochemistry nor it into physics etc. They are just different and indispensable levels of description. Wittgenstein famously described it 80 years ago in the Blue Book.

"Our craving for generality has [as one] source … our preoccupation with the method of science. I mean the method of reducing the explanation of natural phenomena to the smallest possible number of primitive natural laws; and, in mathematics, of unifying the treatment of different topics by using a generalization. Philosophers constantly see the method of science before their eyes, and are irresistibly tempted to ask and answer in the way science does. This tendency is the real source of metaphysics, and leads the philosopher into complete darkness. I want to say here that it can never be our job to reduce anything to anything, or to explain anything. Philosophy really is "purely descriptive."

Like nearly all 'hard' scientists and even sadly 'soft' ones as well, he has no grasp at all of how language works, e.g., of how 'thinking' and other psychological verbs work, so misuses them constantly throughout his writings (e.g., see his comments on Searle on p170). I won't go into an explanation here as I have written extensively on this (see my recent ebook Philosophy, Human Nature and the Collapse of Civilization -- Articles and Reviews 2006-2017 by Michael Starks 3rd Ed. 675p (2017)). So, like most scientists, and even most philosophers, he plays one language game (uses the words with one meaning or Condition of Satisfaction) but mixes it up with other quite different meanings, all the while insisting that his game is the only

one that can be played (has any 'real' sense). Like most, he also is not clear on the distinction between scientific issues of fact and the issues of how language can be used intelligibly. Also, he does not have a clear grasp of the distinction between the two systems of thought, the automaticities of nonlinguistic system S1 and the conscious deliberations of linguistic system S2 but I have described this extensively in my writings and will not do so here.

Another thing that Kurzweil never mentions is the obvious fact that there will be severe and probably frequently fatal conflicts with our robots. Just think about the continual daily problems we have living with other humans, about the number of assaults, abuses and murders every day. Why should these be any less with androids--and then who takes the blame? There would not seem to be any reason at all why androids should be less in conflict with each other, and with us, than other humans are already.

Asimov's law of robotics –do not harm humans, is a fantasy that is unattainable in practice for androids just as it is for us. I admit (as Searle has many times) that we are 'androids' too, though designed by natural selection, not having 'intelligence' from one viewpoint, but having limitless 'intelligence' from another.

What is to stop androids having all the mental ailments we have—neuroses, psychoses, sociopathies, egomania, greed, selfish desire to produce endless copies of one's own 'genome' (electrome, digitome, silicome?), racism (programism?), something equivalent to drug addiction, homicidal and suicidal tendencies? Of course, humans will try to exclude bad behavior from the programs but this will have to be after the fact, i.e., when it's already dispersed, and as they will be self-programming and updating, any badness that confers a survival advantage will spread rapidly. This is of course just the android equivalent of humanoid evolution by natural selection (inclusive fitness).

John Searle killed the idea of strong AI with the Chinese room and other descriptions of the incoherence of various language games (as Wittgenstein had done superbly long before there were computers, though few have

noticed). He is regarded by some as the nemesis of AI, but in fact he has just kept it on track and has no antipathy to it at all. Searle has said repeatedly that of course machines can think and feel, for we are such machines! Made of proteins etc., and not metal, but machines in a very fundamental sense nevertheless. And machines that took about 4 billion years of experimentation in a lab the size of the earth with trillions or trillions of machines being created and only a tiny number of the most successful surviving. The efforts of AI seem or at least robotics, seem trivial by comparison. And as he notes it is possible that much or all of our psychology may be unique to fleshy beings, just as much of AI may be to solid state androids. How much might be true overlap and how much vague simulation is impossible to say.

Darwinian selection or survival of the fittest as it applies to machines, is a major issue that is never addressed by Kurzweil, nor most others, but is the subject of a whole book by philosopher-scientist Nik Bostrum and of repeated warnings by black hole physicist and world's longest surviving ALS sufferer Stephen Hawking. Natural selection is mostly equivalent to inclusive fitness or favoritism towards close relatives (kin selection). And there is no countervailing 'group selection' for 'niceness' (see my review of Wilson's The Social of Conquest of Earth (2012)). Yes, we do not have DNA and genes in robots (yet), but in what is perhaps philosopher Daniel Dennett's most (only?) substantive contribution to philosophy, it is useful to regard inclusive fitness as the 'universal acid' which eats through all fantasies about evolution, nature and society. So, any self-replicating android or program that has even the slightest advantage over others will automatically eliminate them and humans and all other lifeforms, protein or metal, that are competitors for resources, or just for 'amusement' as human do with other animals.

Exactly what will prevent programs from evolving selfishness and replacing all other competing machines/programs or biological life forms? If one takes the 'singularity' seriously, then why not take this just a seriously? I commented on this a long ago and of course it is a staple of science fiction. So, AI is just the next stage of natural selection with humans speeding it up in

certain directions until they are replaced by their creations, just as the advantages in our 'program' resulted in the extinction of all other hominoid subspecies.

As usual in 'factual' accounts of AI/robotics, Kurzweil gives no time to the very real threats to our privacy, safety and even survival from the increasing 'androidizing' of society which are prominent in other nonfiction authors (Bostrum, Hawking etc.) and frequent in scifi and films. It requires little imagination to see this book as just another suicidal utopian delusion concentrating on the 'nice' aspects of androids, humanoids, democracy, computers, technology, ethnic diversity, and genetic engineering. It is however thanks to these that the last vestiges of our stability/privacy/security/prosperity/tranquility/sanity are rapidly disappearing. Also, drones and autonomous vehicles are rapidly increasing in capabilities and dropping in cost, so it will not be long before enhanced AI versions are used for crime, surveillance and espionage by all levels of government, terrorists, thieves, stalkers, kidnappers and murderers. Given your photo, fingerprints, name, workplace, address, mobile phone #, emails and chats, all increasingly easy to get, solar powered or self-charging drones, microbots, and vehicles will be able carry out almost any kind of crime. Intelligent viruses will continue to invade your phone, pc, tablet, refrigerator, car, TV, music player, health monitors, androids and security systems to steal your data, monitor your activities, follow you, and if desired, extort, kidnap or kill you. Its crystal clear that if the positives will happen then the negatives will also. This dark side of AI/Robotics/The internet of things goes unmentioned in this book, and this is the norm.

Though the idea of robots taking over has been in scifi for many years, I first started to think seriously about it when I read about nanobots in Drexler's Engines of Creation in 1993. And many have worried about the 'grey goo' problem—i.e., of nanobots replicating until they smother everything else.

Another singularity that Kurzweil and most in AI do not mention is the possibility that genetic engineering will soon lead to DNA displacing silicon

as the medium for advanced intelligence. CRISPR and other techniques will let us change genes at will, adding whole new genes/chromosomes in months or even hours, with superfast development of organisms or brains in vats without bothersome bodies to encumber them. Even now, without genetic engineering, there are precocious geniuses mastering quantum mechanics in their early teens or taking the cube of a 10 digit number in their head. And the programming of genes might be done by the same computers and programs being used for AI.

Anyone who takes AI seriously also might find of interest my article on David Wolpert's work on the ultimate law in Turing Machine Theory which suggests some remarkable facets of and limits to computation and 'intelligence'. I wrote it because his work has somehow escaped the attention of the entire scientific community. It is readily available on the net and in my book: Wolpert, Godel, Chaitin and Wittgenstein on impossibility, incompleteness, the liar paradox, theism, the limits of computation, a nonquantum mechanical uncertainty principle and the universe as computer—the ultimate theorem in Turing Machine Theory (2015).

To his credit, Kurzweil makes an effort to understand Wittgenstein (p220 etc.), but (like 50 million other academics) has only a superficial grasp of what he did. Before computers existed, Wittgenstein discussed in depth the basic issues of what computation was and what makes humans distinct from machines, but his writings on this are unknown to most. Gefwert is one of the few to analyze them in detail, but his work has been largely ignored.

On p222 Kurzweil comments that it is 'foolish' to deny the 'physical world' (an intricate language game), but it is rather that one cannot give any sense to such a denial, as it presupposes the intelligibility (reality) of what it denies. This is the ever-present issue of how we make sense of (are certain about) anything, which brings us back to Wittgenstein's famous work 'On Certainty' (see my various reviews of his books) and the notion of the 'true only' proposition. Like all discussions of behavior, Kurzweil's needs a logical structure for rationality (intentionality) and (what is equivalent) a thorough understanding of how language works, but it is almost totally absent. As

much of my book deals with these issues I won't go into them here except to provide the summary table of intentionality.

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)

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

FROM DECISION RESEARCH

	Disposition*	Emotion	Memory	Perception	Desire	PI**	IA***	Action/ Word
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 Prior Intentions

*** Searle's Intention In Action

**** Searle's Direction of Fit

***** Searle's Direction of Causation

****** (Mental State instantiates--Causes or Fulfills Itself). Searle formerly called this causally self- referential.

******* Tversky/Kahneman/Frederick/Evans/Stanovich defined cognitive systems.

******** Here and Now or There and Then

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.

On p 278 he comments on our improving life and references 'Abundance' by his colleague Diaminidis – another utopian fantasy, and mentions Pinker's recent work "The Better Angels of Our Nature: Why Violence Has Declined", but fails to note that these improvements are only temporary, and are bought at the cost of destroying our descendant's futures. As I have reviewed Pinker's book and commented in detail on the coming collapse of America and the world in my articles, I will not repeat it here.

Every day we lose about 200 million tons of topsoil into the sea (ca. 12kg/person/day) and about 20,000 hectares of agricultural land becomes salinified and useless. Fresh water is disappearing in many areas. And every day the mothers of the 3rd world (the 1st world now decreasing daily) 'bless' us with another 300,000 or so babies, leading to a net increase of about 200,000—another Las Vegas every 10 days, another Los Angeles every month. About 4 billion more by 2100, most in Africa, most of the rest in Asia. The famously tolerant Muslims will likely rise from about 1/5th to about 1/3 of the earth and control numerous H bombs. Thanks to the social delusions of the few hundred politicians who control it, America's love affair with 'diversity' and 'democracy' will guarantee its transformation into a 3rd world hellhole and the famously benevolent Chinese will take center stage. Sea level is projected to rise at least one to three meters by 2100 and some projections are ten times higher. There is no doubt at all that it will eventually rise much higher and cover much of the world's prime cropland and most heavily populated areas. It's also clear that the oil and natural gas and good quality easy to get coal will be gone, much of the earth stripped of topsoil, all the

forests gone, and fishing dramatically reduced. I would like to see a plausible account of how androids/AI will fix this. Even if theoretically possible, at what cost in money and pollution and social distress to created and maintain them? The second law of thermodynamics and the rest of physics, chemistry and economics works for androids as well as hominoids. And who is going to force the world to cooperate when its obvious life is a zero-sum game in which your gain is my loss? There is no free lunch. Even if robots could do all human tasks right now it would not save the world from constant international conflicts, starvation, disease, crime, violence and war. When they cannot be made to cooperate in this limited time of abundance (bought by raping the earth) it is hopelessly naïve to suppose that they will do it when anarchy is sweeping over the planet.

I take it for granted that technical advances in electronics, robotics and AI will occur, resulting in profound changes in society. However, I think the changes coming from genetic engineering are at least as great and potentially far greater, as they will enable us to utterly change who we are. And it will be feasible to make supersmart/super strong servants by modifying our genes or those of other monkeys. As with other technology, any country that resists will be left behind. But will it be socially and economically feasible to implement biobots or superhumans on a massive scale? And even if so, it does not seem remotely possible, economically or socially to prevent the collapse of industrial civilization.

So, ignoring the philosophical mistakes in this volume as irrelevant, and directing our attention only to the science, what we have here is another suicidal utopian delusion rooted in a failure to grasp basic biology, psychology and human ecology, the same delusions that are destroying America and the world. I see a remote possibility the world can be saved, but not by AI/robotics, CRISPR, nor by democracy and equality.

Suicide by Democracy-an Obituary for America and the World

Michael Starks

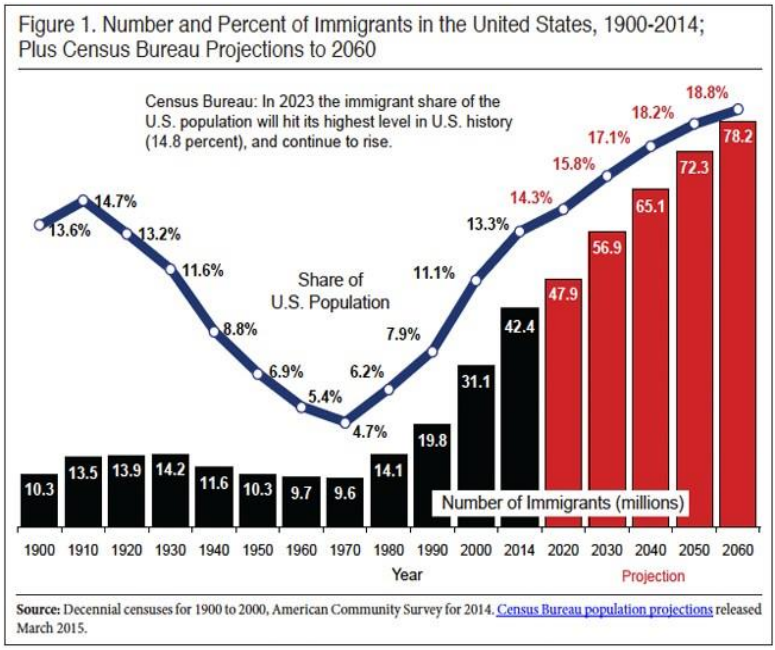
ABSTRACT

America and the world are in the process of collapse from excessive population growth, most of it for the last century, and now all of it, due to 3rd world people. Consumption of resources and the addition of 4 billion more ca. 2100 will collapse industrial civilization and bring about starvation, disease, violence and war on a staggering scale. The earth loses about 2% of its topsoil every year, so as it nears 2100, most of its food growing capacity will be gone. Billions will die and nuclear war is all but certain. In America, this is being hugely accelerated by massive immigration and immigrant reproduction, combined with abuses made possible by democracy. Depraved human nature inexorably turns the dream of democracy and diversity into a nightmare of crime and poverty. China will continue to overwhelm America and the world, as long as it maintains the dictatorship which limits selfishness. The root cause of collapse is the inability of our innate psychology to adapt to the modern world, which leads people to treat unrelated persons as though they had common interests. The idea of human rights is an evil fantasy promoted by leftists to draw attention away from the merciless destruction of the earth by unrestrained 3rd world motherhood. This, plus ignorance of basic biology and psychology, leads to the social engineering delusions of the partially educated who control democratic societies. Few understand that if you help one person you harm someone else—there is no free lunch and every single item anyone consumes destroys the earth beyond repair. Consequently, social policies everywhere are unsustainable and one by one all societies without stringent controls on selfishness will collapse into anarchy or dictatorship. The most basic facts, almost never mentioned, are that there are not enough resources in America or the world to lift a significant percentage of the poor out of poverty and keep them there. The attempt to do this is bankrupting America and destroying the world. The earth's capacity to produce food decreases daily, as does our genetic quality. And now, as always, by far the greatest enemy of the poor is other poor and not the rich. Without dramatic and immediate changes, there is no hope for preventing the collapse of America, or any country that follows a democratic system.

“I can’t understand why people are frightened of new ideas. I’m frightened of the old ones.” John Cage (1912-1992)

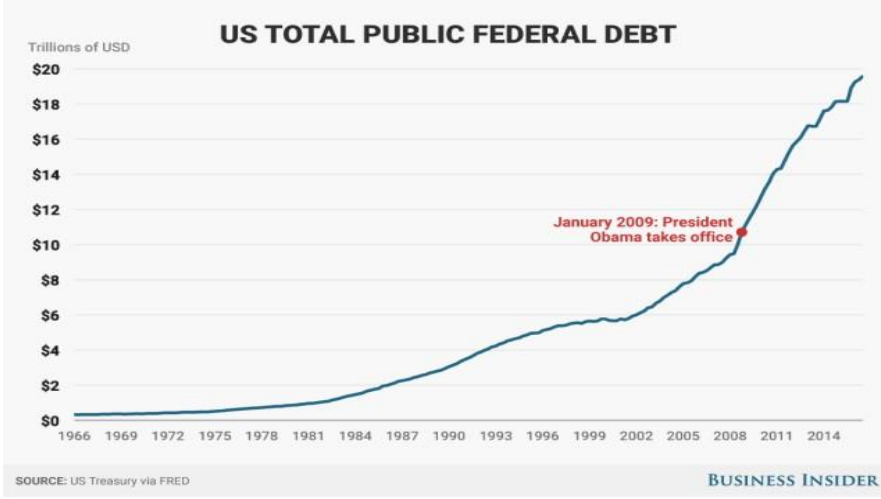
“At what point is the approach of danger to be expected? I answer, if it ever reach us it must spring up amongst us; it cannot come from abroad. If destruction be our lot, we must ourselves be its author and finisher. As a nation of freemen we must live through all time or die by suicide.” Abraham Lincoln 1838

THE SADDEST DAY IN US HISTORY. President Johnson, with 2 Kennedy’s and ex-President Hoover, gives America to Mexico— Oct 3rd 1965. Wolves in sheep’s clothing, like most Democrats from that day onward.



PERCENT OF AMERICANS WHO ARE FOREIGN BORN -- the result of the "no significant demographic impact" immigration act of 1965—non-Europeans (the Diverse) were a 16% share, are now (2016) 37% and will be about 60% by 2100, since they are now 100% of the population increase of about 2.4 million every year. Suicide by democracy.

PART OF THE COST OF DIVERSITY and of aging, being the world's policeman, etc., (not counting future liabilities which are 5 to 10 times as much, barring major social changes).



Useful definitions for understanding contemporary American politics.

DIVERSITY: 1. USA government program for handing over control to Mexico. 2. USA government program for providing free goods and services to those from other countries. 3. A means for turning America into a 3rd world Hellhole. 4. Multiculturalism, multiethnicism, multipartisanism, Inclusivity.

RACIST: 1. Person opposed to diversity in above sense. 2. Person of different ethnicity who disagrees with me on any issue. 3. Person of any ethnicity who disagrees with me on anything. Also, called 'bigot' or 'nativist'.

WHITE SUPREMACIST: Anyone opposed to diversity in the above sense, i.e., anyone trying to prevent the collapse of industrial civilization.

THIRD WORLD SUPREMACIST: Anyone in favor of diversity in above senses. Anyone working to destroy their descendant's future.

HATE: 1. Any opposition to diversity in the above sense. 2. Expression of a desire to prevent the collapse of America and the world.

EURO: White or Caucasian or European: one whose ancestors left Africa over 50,000 years ago.

BLACK: African or Afro-American: one whose ancestors stayed in Africa or left in the last few hundred years (so there has not been time for evolution of any significant differences from Euros).

DIVERSE: Anyone who is not EURO (European, white, Caucasian).

I should first note that I have no investment in the outcome of any social or political movement. I am old, without kids or close relatives, and in the blink of an eye I will be gone (of course the most important thing to remember is that very soon we will all be gone and our descendants will face the horrific consequences of our stupidity and selfishness). I offer these comments in hope they will give perspective, since rational competent analyses of the perilous situation in America and the world are almost nonexistent. I have had close friends of various ethnicities, several times given my only assets to an impoverished third world person (no I did not inherit anything significant, did not have rich relatives, a trust fund or a cushy job), have had third world friends, colleagues, girlfriends, wives and business partners, and helped anyone in any way I could regardless of race, age, creed, sexual preferences or national origin and am still doing so. I have not voted in any kind of election, belonged to any social or political group, listened to a political speech or read a book on politics in over 50 years, as I considered it pointless and demeaning. This is my first and last social/political commentary. I find nearly all political dialog to be superficial, mistaken and useless.

The millions of daily articles, speeches and newsbites rarely mention it, but what is happening in America and worldwide are not some transient and

unconnected events, but the infinitely sad story of the inexorable collapse of industrial civilization due to overpopulation. Though this is the only important issue, it seldom comes up in the endless debates and daily social convulsions worldwide, and in particular few things in this article are ever discussed in any intelligent way, in large part because the Diverse (i.e., those not of European ancestry) have a strangle hold on the media which make it impossible. Politics is dedicated almost entirely to providing the opportunity for every special interest group to get an ever-bigger share of the rapidly diminishing resources. The problem is that nearly all people are shor- sighted, selfish, poorly educated, lacking experience and stupid and this creates an insoluble problem when there are 11 billion (by century's end), or when they constitute a majority of any electorate in a democratic system. It's one thing to make mistakes when there are time and resources to correct them, but quite another when it's impossible. The USA is the worst case as it seems to have vast resources and a resilient economy, and what I and most people grew up regarding as the wonderful traditions of justice, democracy, and equality, but I now see that these are invitations to exploitation by every special interest group and that giving rights to everyone born, without imposing duties, has fatal consequences. Also, a system that operates this way cannot compete with ones that do not- Asia is eating America's lunch (and that of all non-Asian countries), and nothing can stop it, but of course overpopulation dooms everyone (the minority who will survive after the great 22ndcentury die-off) to a hellish life. A world where everyone is free to replicate their genes and consume resources as they wish will soon have a hard landing. The fact is that democracy is a license to steal- from the government—i.e., from the shrinking minority who pay significant taxes, from the earth, from everyone everywhere, from one's own descendants, and that diversity (multiculturalism, multipartisanism, inclusiveness) leads to conflict and collapse.

The history in America is clear enough. First, the Northern states decided it was inappropriate for the South to have slaves, so they attacked it, killing and crippling millions and reducing it to poverty and chaos that lasted for many decades. The Africans eventually replicates their genes at a much higher rate than non-Africans, resulting in their coming to comprise an ever-increasing

percentage of the country. Nobody realized it at the time and most still do not, but this was the beginning of the collapse of America.

Without asking the voters, a few thousand statesmen and congressmen and the president made ex slaves citizens and gave them the right to vote via the 14th and 15th amendments. Gradually there came to be vast ghettos composed of ex slaves, where crime and poverty flourished, and where drugs (imported mostly by Hispanics) generated a vast criminal empire, whose users committed hundreds of millions of crimes every year. Then came the Kennedys, who, raised in privilege and disconnected from the real world, and having like nearly all politicians no clue about biology, psychology, human ecology or history, decided in 1965 that it was only democratic and just that the country should change the immigration laws to decrease influx of Europeans in favor of 3rd world people (the Diverse). They passed the law and in 1965 president Lyndon Johnson signed it (see photo). There were misgivings from some quarters that this would destroy America, but they were assured that there would be "no significant demographic impact"! The American public never (to this day in 2017) had a chance to express their views (i.e., to vote), unless you count the Trump election as that chance, and congress and various presidents changed our democracy into a "Socialist Democracy", i.e., into a semi-communist state enforced by fascism. The Chinese are delighted as they do not have to fight the USA for dominance, but only to wait for it to collapse. The popular notions supported by the Democratic Party and Third World Supremacists are that Democracy, Diversity, Equality and Social Justice will produce a Utopia in America and the world, but it is clear as crystal that they unavoidably foster selfishness and divisiveness and are producing collapse.

A few decades ago, William Brennen, Chief Justice of the Supreme Court, suggested that a law passed a century before, to guarantee citizenship to former slaves (the first fatal mistake), should apply to anyone who happened to be born in America. Subsequently, other rulings of the court (not the people, who have never been asked) decided all those born in the USA, regardless of parental status (e.g., even if they were aliens from another solar system) had a right to US citizenship (anchor babies) and were permitted to

make citizens of all their relatives – (the second fatal mistake). Again, it never crossed the minds of congress or the courts that the constitution did not give any such rights, nor that the American public should be permitted to vote on this. In addition to the millions of 3rd world people here ''legally" (i.e., with the permission of a few hundred in congress, but not the people) millions began entering illegally and all produced children at about 3 times the rate of existing Americans and generated ever increasing social problems. Most of the Diverse paid little or no taxes, and so they lived partly or wholly on government handouts (i.e., taxes paid by ever shrinking minority of Americans who pay any, as well as money borrowed from future generations to the tune of $2.5 billion a day, added to the $18 trillion in debt and the $50 trillion or more of unfunded future obligations—medicare, social security etc.), while the agricultural system, housing, streets and highways, sewers, water and electrical systems, parks, schools, hospitals, courts, public transportation, government, police, fire, emergency services and the huge defense spending needed to ensure the continued existence of the country, were created, staffed and largely paid for by Euros (i.e., those of European ancestry). The fact that the Diverse owe their well-being (relative to the Diverse still in the 3rd world) and their very existence to Euros is never mentioned by anyone (see below).

Naturally, the Euros (and a minority of tax paying Diverse) are outraged to have to spend ever more of their working lives to support the legions of newly arrived Diverse, to be unsafe in their own homes and streets and to see their towns, schools, hospitals, parks etc. being taken over and destroyed. They try to protest, but the media are now controlled by the Diverse (with the help of deluded Euros who are dedicated to destroying their own descendants), and it is now almost impossible to state any opposition to Diversity without being attacked as "racist", "white supremacist" or "a hater", and often losing one's job for exercising free speech. Words referring to the Diverse are almost banned, unless it's to praise them and assist their genuine racism (i.e., living at the expense of and exploiting and abusing in every way possible the Euro's, and their Diverse tax paying neighbors), so one cannot mention blacks, immigrants, Hispanics, Muslims etc. in the same

discussion with the words rapist, terrorist, thief, murderer, child molester, convict, criminal, welfare etc., without being accused of "hatred" or "racism" or "white supremacy". They are of course oblivious to their own racism and third world supremacy. Keep in mind there is not and almost certainly will never be any evidence of a significant genetic difference between Euros and Diverse in psychology, or IQ, and that their tendency to excessive reproduction and other shortcomings is wholly due to culture.

Gradually, every kind of special interest group has succeeded in eliminating any negative reference to them in any easily identifiable way, so there has almost vanished from public discourse not only words referring to the Diverse, but to the short, tall, fat, thin, mentally ill, handicapped, genetically defective, disadvantaged, abnormal, schizophrenic, depressed, stupid, dishonest, crazy, lazy , cowardly, selfish, dull etc. until nothing but pleasant platitudes are heard and one is left puzzled as to who fills the jails, hospitals and mental wards to overflowing, litters the streets with garbage, destroys the parks, beaches and public lands, robs, riots, assaults, rapes and murders, and uses up all the tax money, plus an extra 2.5 billion dollars a day, added to the 18 trillion national debt (or over 90 trillion if you extend the real liabilities into the near future). Of course, it's not due all to the Diverse, but every passing day a larger percentage is.

It is now fifty years after passing the new immigration act and about 15% of the population is Hispanic (up from less than 1% earlier), who reproduce at about 3X the rate of Euros (though it's down to perhaps 2X now), so that about half of children under 6 are now Hispanic, while some 13% of the country are blacks, rapidly being displaced and marginalized by Hispanics (though few blacks realize it, so they continue to support the politicians favoring further immigration and promising short term gains). Virtually nobody grasps the eventual collapse of America and the whole world, in spite of the fact that you can see it in front of your eyes everywhere. In America and worldwide, the Euros are producing less than two kids per couple, so their populations are shrinking, and in America in 2014, for the first time since Euros came here, more of them died than were born, so their marginalization is certain. And, showing the "success" of the Democrats immigration policies,

the population of Hispanics in California passed 50%, so within a decade, the 6th largest economy in the world will be part of Mexico.

The Diverse will, in this century, eliminate all American "racism" (i.e., any opposition or legal hindrance to takeover of all political power, and the appropriation of as much of their neighbor's money and property as they can manage), except their own racism and classism (e.g., graduated income tax which forces the Euro's to support them). Soon they will largely eliminate legal differences between citizens of Mexico and California or Texas, who then will have full 'rights' (privileges) anywhere in the USA, so that citizenship will became increasingly meaningless (so an ever-lower percentage of the Diverse will pay any significant taxes or serve in the military, and a far higher percentage will continue to receive welfare and to commit crimes, and to get free schooling and medical care). One cannot mention in the media that the predominant racism in the USA is the extortion by the Diverse of anyone with money (mainly Euros), the elimination of free speech (except their own), the biasing of all laws to favor this extortion, and their rapid takeover of all political and financial power, i.e., total discrimination against Euros and anyone belonging to the "upper classes", i.e., anyone who pays any significant taxes.

Gradually the poverty, drugs, gangs, environmental destruction and the corruption of police, army and government endemic in Mexico and most other 3rd world countries is spreading across America, so we will be able to cross over the increasingly porous border with Mexico without noticing we are in a different country –probably within a few decades, but certainly by the end of the century. The population continues to increase, and here as everywhere in the world, the increase is now 100% Diverse and, as we enter the next century (much sooner in some countries), resources will diminish and starvation, disease, crime and war will rage out of control. The rich and the corporations will mostly still be rich (as always, as things get worse they will take their money and leave), the poor will be poorer and more numerous, and life everywhere, with the possible exception of a few countries or parts of countries where population growth is prevented, will be unbearable and unsurvivable.

The cooperation among the Diverse to wrest control of society from Euros will crumble as society disintegrates and they will split into blacks, Hispanics, Muslims, Chinese, Filipinos etc. The rich will increasingly hire bodyguards, carry guns, drive bulletproof cars and use private police to protect them in their gated communities and offices, as is already commonplace in 3rd world countries. With much reduced quality of life and high crime, some will think of returning to their countries of origin, but there also overpopulation will exhaust resources and produce collapse even more severe than in the USA and Europe, and the racism in the 3rd world, temporarily suppressed by a relative abundance of resources and police and military presence, will become ever more severe, so life will be hellish nearly everywhere. The population in the 22st century will shrink as billions die of starvation, disease, drugs, suicide, and civil and international war. As 3rd world nuclear countries collapse (Pakistan, India and maybe Iran by then, thanks to Obama) and are taken over by radicals, nuclear conflicts will occur. Still, perhaps nobody will dare to suggest publicly that the cause of chaos was unrestricted 3rd world motherhood.

Of course, much of this story has already played out in America, the U.K. and elsewhere, and the rest is inevitable, even without climate change, which just makes it happen faster. It's only a matter of how bad it will get where and when. Anyone who doubts this is out of touch with reality, but you can't fool mother nature, and their descendants will no longer debate it as they will be forced to live it.

The poor, and apparently, Obama, Krugman, Zuckerberg and most Democrats, don't understand the most basic operating principle of civilization—there is no Free Lunch. You can only give to one by taking from another, now or in the future. No such thing as helping without hurting. Every dollar and every item has value because somewhere, someone destroyed the earth. And they have the delusion that they can solve all problems by stealing from the rich. To get some idea of the absurdity of this, all US taxpayers earning over a million have a total after tax profit of about 800 billion, while the annual deficit is about 1.5 trillion, and even taking it all

does nothing to pay off the existing 18 trillion debt or the approx. 90 trillion in near term unfunded liabilities (e.g., medicare and social security). Of course, you cannot increase their tax or corporate tax very much more or it will greatly depress the economy and produce a recession, job losses and the flight of capital, and they already pay the highest taxes, relative to what they earn as a % of the nation's income, of any industrialized country. And once again, the top 1% of earners pay about 50% of total personal federal income tax while the bottom 40% (mostly Diverse) pay nothing. So the fact is we only have a sort of democracy, as we have almost nothing to say about what the govt. does, and a sort of fascism, as the ever expanding govt. spies on our every move, controls ever more minutely our every action, and forces us at gunpoint to do whatever they decide, and a sort of communism as they steal whatever they want from whomever they want and use it to support anyone they like, here and all over the world, most of whom have no interest in democracy, justice, or equality, except as means to take advantage of our fatally flawed system to get as much money and services as they can in order to support replicating their genes and destroying the earth.

Speaking of Obama, Trump says that he is the worst president ever, and of course Obama, totally arrogant, dishonest and lacking any real grasp of the situation (as usual) just laughs, and babbles platitudes, but as I reflect a bit it's clearly true. Like Roosevelt, who gave us the first giant step into fascism and govt. waste and oppression with an illegal and unconstitutional tax (social security), Obamacare let the govt. swallow 1/6 of the economy and created its own illegal tax (called 'penalties', where FDR called them 'benefits' and 'contributions'). He tried to force the US to accept another 8 to 10 million illegals (nobody seems quite sure) which will 'birthright' into about 50 million by 2100. In the first 3 years of his office (2009 to 2012) the federal operating deficit increased about 44% from 10 to 15 trillion, the largest percent increase since WW2, while by mid-2015 it had increased to over 71% of fiscal operating budget -- over $18 trillion or about $57,000 for every person in the USA, including children. His deferral of the deportation of millions of illegals, all of whom now receive social security, tax credits, medicare etc., is estimated to have a lifetime cost to the govt. (i.e., to the minority of us who pay any significant taxes) of ca. $1.3 trillion. Of course, this does not include free

school, use of judicial system, jails and police, free 'emergency' care (i.e., just going to emergency for any problem whatsoever), degradation of all public facilities etc. so it's likely at least twice as much. And we have seen 8 years of incompetent handling of the Iraq, Afghan and Syrian wars. Then he gave the ability to make nuclear weapons to Iran, which is highly likely to lead to a nuclear war by 2100 or much sooner. He was clearly elected for racist, third world supremacist reasons-- because he had visible African genes, while the Euros, having left Africa some 50,000 years earlier have invisible ones. He, and most of the people he appointed, had little competence or experience in running a country and they were picked, like himself, on the basis of Diverse genes and communist/fascist sympathies. If he is not a traitor (giving aid and comfort to the enemy) then who is? It is clear as day that, like nearly everyone, he operates totally on automatic primitive psychology, with his coalitional sympathies going to those who look and act more like him. He (like most Diverse) is in fact doing his best to destroy the country that made his exalted life possible. I agree that he is the worst (i.e., most destructive to American quality of life and survival as a nation) for his lack of honesty, arrogance and assault on freedom and long term survivability —a stunning achievement when his competition includes Nixon and the Bushes.

When considering bad presidents, we could start with Abraham Lincoln, who is revered as a saint, but he (with the help of congress) destroyed much of the country and hundreds of thousands of healthy men fighting the totally unnecessary Civil War, and in many ways, the country will never recover. Slavery would have come to an end soon without the war, as it did everywhere and of course it was Euros who provided the main impetus to bring it to an end here and everywhere. After the war the slaves could have been repatriated to Africa instead of making them citizens, but apparently, it was never suggested in congress. Note the great irony of the quote from him that begins the article, which shows that even the brightest are victims of their own limits, and have no grasp of human biology, psychology or ecology. It never crossed his mind that the world would become horrifically overpopulated and that the Africans would grow to become a giant social problem, just as, in spite of the now clear disaster, it seems not to cross Obama's that the Diverse will destroy America and the world, though any

bright ten year old child can see it.

President Truman could have let McArthur use the atom bomb to end the Korean war and to avoid the continuing horror of North Korea and China. Johnson could have done likewise in Vietnam, Bush in Iraq and Obama in Afghanistan, Syria and Libya. Probably many 3rd world countries would have done so and almost certainly some of the Muslim ones. Once a radical Muslim country gets the bomb a preemptive strike by them or on them will quickly ensue and this is likely by 2100 and certain by 2200. If Gaddafi had succeeded in his efforts to get the bomb it would likely have already happened. The US could have forced Japan, China and Korea, Iraq and Libya and all the countries of Europe to pay for the costs of our military efforts in all the recent wars, instead e.g., of helping them take over most of America's manufacturing. The Kennedy's were an important part of changing the immigration laws in the mid 60's, so they have to count as traitors and major enemies of America on a par with Obama and the Clintons. We could have followed the universal pleas of US industry and refused to sign the GATT, which gave free access to all our patents years before they are granted, though of course the Chinese now hack and steal everything with impunity anyway. Eisenhower could have let the UK keep possession of the Suez canal, instead of blackmailing them into leaving Egypt, and on and on.

Some may be interested in a few statistics to give an idea of where we currently are on the road to hell. In the USA, the population of Hispanics will swell from about 55 million in 2016 (or as much as 80 million if you accept some estimates of 25 million illegals—it's a mark of how far the govt. has let things go that we don't really know) to perhaps 140 million midcentury and 200 million as we enter the 22 century, at which time the US population will be soaring past 500 million, and the world population will be about 11 billion, 3 billion of that added from now to then in Africa and 1 billion in Asia (the official UN estimates). The Hispanics are reproducing so fast that Euros, now a 63% majority, will be a minority by midcentury and about 40% by 2100. Most of the increase in the USA from now on will be Hispanics, with the rest blacks, Asians and Muslims, and all the increase in the world will be 100% Diverse. About 500,000 people are naturalized yearly and since they are

mostly from the 3rd world and produce children at about twice the rate of Euros, that will add perhaps 2 million midcentury and 5 million by 2100 for every year it continues.

To show how fast things got out of control after the "no demographic impact" TKO (Ted Kennedy Outrage, though we could equally call it the LBJ outrage, the Democratic outrage etc.) immigration act of 1965, there are now more Hispanics in California than there are people in 46 other states. In 1970 just after the TKO, there were about 4 million Hispanics and now there are over 55 million "legals" (i.e., not made legal by the voters but by a handful of politicians) and perhaps 80 million counting illegals. It never crosses the minds of the Democratic block-voting poor Diverse that the ones who will suffer by far the most from the "Diversification" of America are themselves. The U.S. has gone from 84 percent white, 11 percent black, 4 percent Hispanic and 1 percent Asian in 1965, to 62 percent white, 11 percent black, 18 percent Hispanic and 6 percent Asian now, according to a recent Pew report. By 2055, no one group is expected to have a majority--a perfect scenario for chaos, but you can see countless idiots from academia praising multipartisanism. The Asians are predicted to increase faster than any group, doubling their percentage in the next few decades, but at least they will have gone thru a minimal immigration procedure, except of course for anchor baby families (producing which is now a major industry as Asians fly here to give birth, though they are greatly surpassed by Hispanics who only have to walk across the border at night). Of course, the Asians are by and large a blessing for America as they are more productive and less trouble than any group, including Euros.

The US government (alone of major countries) pushes "diversity" but in countries all over the world and throughout history attempts to weld different races and cultures into one have been an utter disaster. Many groups have lived among or alongside others for thousands of years without notably assimilating. Chinese and Koreans and Japanese in Asia, Jews and gentiles in thousands of places, Turks, Kurds and Armenians etc., have lived together for millennia without assimilating and go for each other's throats at the

slightest provocation. After over 300 years of racial mixing, the USA is still about 97% monoracial (i.e., white, Hispanic, black etc.) with only about 3% describing themselves as mixed race (and most of them were mixed when they came here). The Native Americans (to whom the whole New World really belongs if one is going to rectify past injustices against the Diverse) are mostly still living isolated and (before the casinos) impoverished, as are the blacks who, 150 years after emancipation, largely still live in crime ridden, impoverished ghettos. And these have been the best of times, with lots of cheap land and natural resources, major affirmative action programs, a mostly healthy economy and a government which extorts over 30% of their money (i.e., 30% of their working lives, counting income tax, sales tax, real estate tax etc.), earned by the tax paying part of the middle and upper class, to give the poor massive handouts -- not only food stamps and other welfare, but police, and fire services, streets and parks, the government, the justice system, hospitals, national defense, schools, roads, bridges, power grid, etc., and the costs of environmental degradation, and the financial and emotional costs of crime and it's threat, etc., most of these never counted when considering the 'costs of welfare' or the huge downside to diversity.

In any case, the liberal, democratic delusion is that such largesse and social policies will weld our 'diverse' (i.e., fatally fragmented) society into one happy family. But government handouts need to continually increase (for social security, wars, health care, schools, welfare, infrastructure, etc.) while the relative tax base shrinks, and our debt and unfunded entitlements grow by trillions a year, so the economy is in the process of collapse. The average family has less real net earnings and savings now than two decades ago and could survive about 3 months without income, about 40% of retired Americans have less than $25,000 savings etc. And again, these are the best of times with lots of 'free' resources (i.e., stolen from others and from our descendants) worldwide and about 4 billion less people than there will be by the next century. As economies fail and starvation, disease, crime and war spread, people will split down racial and religious lines as always, and in the USA Hispanics and Blacks will still dominate the bottom. It rarely occurs to those who want to continue (and increase) the numbers of and the subsidization of the Diverse that the money for this is ultimately stolen from

their own descendants, on whom falls the burden of over $80 trillion debt (or up to $220 trillion if liabilities continued without reduction of handouts and no tax increase), and a society and a world collapsing into anarchy.

As noted, one of the many evil side effects of diversity (e.g., massive increases in crime, environmental degradation, traffic gridlock, decreasing quality of schools, coming bankruptcy of local, state and federal governments, corruption of police and border officials, rising prices of everything, overloading of the medical system, etc.) is that our right to free speech has disappeared on any issue of possible political relevance and of course that means just about any issue. Even in private, if any negative comment on 'diversity' is recorded or witnessed by anyone credible, the racist, third world supremacist Diverse and their Euro servants will try to take away your job, and damage your business or your person. This is certain when it involves public figures and racial or immigration issues, but nothing is off limits. Dozens of books in the last two decades address the issue including 'The New Thought Police: Inside the Left's Assault on Free Speech and Free Minds', 'End of Discussion: How the Left's Outrage Industry Shuts Down Debate, Manipulates Voters, and Makes America Less Free (and Fun)' and 'The Silencing: how the left is killing free speech', but nothing will dissuade the Democratic Socialists and the lunatic fringe liberals.

Another 'side effect' is the loss of much of our freedom and privacy as the government continues to expand its war on terror. There was never a compelling reason for admitting any serious number of Muslims (or any more Diverse for that matter). In any case, it seems a no-brainer to not admit and to expel single unmarried male Muslims aged 15 to 50, but even such obvious simple moves are beyond the capabilities of the retards who control congress and of course our beloved presidents, all of whom, with the members of congress, who voted for the immigration law changes starting in 1965, could be held personally responsible for 9/11, the Boston Marathon Bombing etc. Of course, Trump is trying to change this but it's too little, too late and barring his (or someone's) declaring martial law and running the country with the army, Americas date with destiny is certain.

A lovely example of how suppression of free speech leads to ever more insanity is the case of Major Hasan (courtesy Mark Steyn's "After America"). An army psychiatrist at Fort Hood who had SoA (Soldier of Allah) on his business card, was frequently reprimanded when a student for trying to convert patients to Islam, and many complaints were filed for his constant anti-American comments--one day he gave a Power Point lecture to a room full of army doctors justifying his radicalism. Free speech and common sense being no more available in the military than civilian life, he was then promoted to Major and sent to Fort Hood, where he commented to his superior officer on a recent murder of two soldiers in Little Rock: "this is what Muslims should do—stand up to the aggressors" and "people should strap bombs on themselves and go into times square", but the army did nothing for fear of being accused of bias. One day he walked out of his office with an assault rifle and murdered 13 soldiers. It turned out two different anti-terrorism task forces were aware that he had been in frequent email contact with top radical Islamist terrorists. The Army Chief of Staff General George Casey remarked: "What happened at Fort Hood was a tragedy, but I believe it would be an even greater tragedy if our diversity becomes a casualty here"!! Is it losing the 70 million on welfare or the 1.7 million in prison or the 3 million drug addicts that is more tragic?

The invasion of the Southwest by Hispanics gives the flavor of what is coming and Coulter in her book "Adios America" tells of trashed parks, schools that dropped from A to D grade, billions for 'free' (i.e., paid for by the upper middle and upper class and businesses) medical care and other services in Los Angeles alone etc. Anyone living there who remembers what Texas or California were like 30 years ago has no doubts about the catastrophic consequences of diversity as they see it every day. In California, which I know personally, the urban areas (and even most parks and beaches) that I used to enjoy are now crowded with Hispanics and often full of trash and spray painted with gang signs, while the highways are horrifically crowded and the cities and towns overrun with drugs and crime, so most of it is now uninhabitable and the world's 6th largest economy is headed for bankruptcy as it tries to move 20 million mostly lower class Hispanics into the upper

middle class by using tax money from the Euros. The latest lunacy (for this week) was to try to put all illegals on Obamacare. Some persons I know have had their annual medical coverage increase from under $1000 before Obamacare to about $4000 (2017 estimate) and the extra $3000 is what the Democrats are stealing from anyone they can to cover the costs of free or very low-cost care for those who pay little or no taxes and who already are bankrupting hospitals forced to give them free "emergency" care. Of course, Trump will likely kill it soon, but it is already in a death spiral that only a huge increase in fees can fix.

One of the most flagrant violations of US law by the left-wing lunatics who support immigration is the creation of 'sanctuary cities'. The cities do not allow municipal funds or resources to be used to enforce federal immigration laws, usually by not allowing police or municipal employees to inquire about an individual's immigration status. This began with Los Angeles in 1979 (thus becoming the first large city donated to Mexico) and now includes at least 31 major American cities. Presumably, the President could order the army or the FBI to arrest the city officials who passed these regulations for obstruction of justice etc., but it's a murky legal area as (in another indication of the total ineptness of congress and the courts and the hopelessness of the democratic system) immigration violations are civil offenses and not federal or state felonies.

A competent government (maybe we could import one from Sweden, China or even Cuba?) could pass such legislation in a few weeks. Also, it could force compliance by cutting off most or all federal funds to any city or state that failed to comply with federal immigration laws, and at least one such bill has been introduced into congress recently, but the Democrats prevented its passage, and of course Obama or Clinton would have vetoed any attempt at giving American back to Americans. Trump of course has a different view, though he cannot save America. After I wrote this the courts (predictably) blocked Trump's attempt to cut off funds to sanctuary cities, forgetting that their purpose is to protect the citizens of America, and not those of other countries here illegally.

As long as the Democrats (soon to return to power and, rumor has it, to change their name to Democratic Communist Fascist Party of Latin America, Asia, Africa and the Middle East) are in power, nothing will be done and more cities and states will cease to be a part of America. Only a military coup can save America now and it's very unlikely the generals have the courage.

For this review, I read a few politically oriented books and articles that I normally avoid, and in them and the comments on them saw repeated accusations of 'racism' against people who were only stating their desire to have the USA remain a prosperous and safe country. This claim is now almost always false in the normal meaning, but of course true in the new meaning—i.e., one opposed to letting Mexico annex America. So, I wrote a reply to this slander, since I have never seen a good one.

Actually, it's not 'racism' but self-defense –the Diverse in America are the racists, as on the average, your life here is largely an exploitation of other races, notably Europeans and Asians who actually pay taxes. For genuine racism look at how different groups native to your own country or immigrants are treated there. The vast majority of immigrants in the USA would not even be permitted to enter your countries, much less permitted citizenship, given free or low cost housing, food, free medical care, free school, the same rights as natives etc. And in the USA, it is the Diverse who have taken away the tranquility, beauty, safety and free speech that existed here before a handful of stupid politicians and supreme court justices let you in. We never voted to let you enter or become citizens--it was forced on us by halfwits in our government. If we had a chance to vote on it, few foreigners except medical, scientific and tech experts and some teachers would have been admitted and perhaps 75% of the Diverse would be deported. In many cases, you have an alien religion (some of which demand the murder of anyone you take a dislike to) and culture (honor killings of your daughters etc.), do not pay a fair share of taxes (typically none) and commit far more crimes per capita (e.g., 2.5x for Hispanics, 4.5x for blacks).

Furthermore, the middle class American pays about 30% of their income to the govt. This is about 66 days/year of their working life and maybe 20 days

of that goes to support the poor, now mostly Diverse. And all the 'free' things such as welfare, food stamps, medical care and hospitals, schools, parks, streets, sanitation, police, firemen, power grid, postal system, roads and airports, national defense etc. exist largely because the 'racist' upper middle and upper class created, maintain and pay for them. Maybe another 4 working days goes to support the police, FBI, justice system, DHS, Border Patrol and other govt. agencies that have to deal with aliens. Add another 10 or so days to support the military, which is mostly needed to deal with the results of 3rd world overpopulation (the real major cause of the Korean War, the Vietnam War, Iraq, Afghanistan, Syria, Libya, Yemen and the major cause of most of the wars, social unrest and conflicts past, present and future), and this cost, added to welfare, medicare, social security and environmental degradation (an ever increasing percentage for immigrants and their descendants) is bankrupting the country, with the only possible solution being to decrease the benefits and increase the taxes, the burden of which will fall on everyone's descendants. You take advantage of the freedom of speech we created to tell malicious lies about us! Most of you, if doing this in your home country would wind up in prison or dead! Shameless liars! What is your problem? --poor education, no gratitude, malicious, stupid, no experience with civilized society? (pick 5). And anyone who doubts any of this just does not know how to use their brain or the net as it's all there. These comments are just the facts that anyone can see, along with simple extrapolations into the future.

Also, please let me ask the Diverse--do people in your country of origin work 30 days a year to support millions of aliens who commit crimes at several times the rate of natives, overcrowd your schools, highways, cities and jails, trash your parks and beaches, spray paint graffiti on buildings and import and sell drugs to addicts who commit over a hundred million crimes a year (added to the 100 million or so they commit themselves)? And have you had a 9/11 and many bombings and murders at home? Do immigrants control the media so that you cannot even discuss these issues that are destroying your country and the world? Will your country be totally in their control in a few generations and be another impoverished, crime ridden, starving, corrupt 3rd world hellhole? Of course, for most of you it already is, and you came to

America to escape it. But your descendants won't have to be homesick for the hellhole, as they will have re-created it here. The Diverse here (and their Euro servants) never tire of complaining in all the media every day about how they are not treated fairly and not given enough (i.e., the Euros and the relatively rich Diverse don't work hard enough to support them), and it never crosses their minds that if it were not for taxes paid mostly by Euros now and for over a century previous, there would be little or no police or fire or medical or school services or parks or public transport or streets or sewers in their communities, and of course not there would not even be a country here, as it is mainly Euros who created, and support it and who serve in the military in all the wars. And it was primarily Euros and their descendants who created the net and the pc's you are reading this on, the tech that produces the food you eat and the medicine that keeps you alive. If not for the Euros technology and security, about 90% of all the Diverse in the world would not exist. Everyone condemns colonialism, but it was the way that the Diverse were brought out of the dark ages into modern times via communications, medicine, agriculture, and enforcement of democratic government. Otherwise all their populations would have stayed very small, backwards, starving, disease ridden, impoverished, isolated and living in the dark ages (including slavery and its equivalents) to this day. To sum it up, the Euro's antipathy to Diversity ('racism') is due to a desire that their children have a country and a world worth living in. Again, this is for everyone's benefit, not just Euros or the rich.

Likewise, all my life I have been hearing blacks saying that their disproportionate problems with drugs, crime and welfare are due to racism, and certainly there is some truth to that, but I wonder why Asians, who must be subject to racism as well (insofar as it exists—and relative to most Diverse counties, it's quite minimal here), and most of whom came here much more recently, spoke little or no English, had no relatives here and few skills, have a fraction of the crime, drugs and welfare (all less than Euros and so way less than blacks or Hispanics) and average about $10,000 more income per family than Euros. Also, blacks never consider that they would not exist if their ancestors were not brought to the new world and they would never have been born or survived in Africa, that those who captured and sold them were

usually African, that to this day Africans in Africa almost universally treat those of different tribes as subhuman (Idi Amin, Rwanda, Gaddafi etc. and far worse is soon to come as the population of Africa swells by 3 billion by 2100), and that if they want to see real racism and economic exploitation and police maltreatment, they should go live almost anywhere in Africa or the 3rd world. Returning to Africa or Mexico etc. has always been an option, but except for criminals escaping justice, nobody goes back. And it was the Euros who put an end to slavery worldwide and, insofar as possible, to serfdom, disease, starvation, crime and war all over the 3rd world. If it were not for colonialism and the inventions of Euros there would be maybe 1/10 as many Diverse alive and they would mostly still be living as they did 400 years ago. Likewise, it's never mentioned that if not for the Euro's, who were about 95% responsible for paying for and fighting and dying in WW2, the Germans and Japanese would now control the world. Also, it was mostly Euro's who fought, are fighting and will be fighting the communists in Korea and Vietnam, and the Muslim fanatics in Iraq, Syria, Libya and Afghanistan and the many others soon to come.

Insofar as any revenge is needed for their slavery, blacks have already had it abundantly. First, they have been largely supported and protected by the Euros for centuries. Second, the parasites they brought with them have infected and destroyed the lives of tens of millions of Euros. Malaria, schistosomes, ascaris, yellow fever, etc., but above all hookworm, which was so common and so debilitating up to the early decades of this century that it was responsible for the widespread view of Southerners as stupid and lazy.
All this is crushingly obvious, but I bet there is not one grade school or college text in the world that mentions any of it, as its clearly 'racist' to suggest that the Diverse owe anything to Euros or to point out that other Diverse treat them far worse than Euros. And they are incapable of grasping the true horror that is coming or they would all be one in opposing any increase in the population by any group anywhere and any immigration into America. By 2100 the Hispanics will control America, and increasingly the world will be dominated by Muslims, who will increase from about 1/5th of the world now to about 1/3rd by 2100 and outnumber Christians, and neither group is noted for embracing multiculturalism. So, the obvious fact is that overall the Euros

have treated the Diverse much better than they have treated each other. And we now have the best of times, while by 2100 (give or take a generation or two) economic collapse and chaos will reign permanently except perhaps a few places that forcibly exclude Diverse. Again, keep in mind that in my view there is not, and almost certainly will never be, any evidence of a significant genetic difference between Euros and Diverse in psychology, or IQ, and that their tendency to excessive reproduction and other cultural limitations are accidents of history.

Likewise, it never crosses their minds that every year maybe 500 billion dollars are spent by federal, state and city govts. on education, medicine, transportation (highways, streets, rail, bus and airline systems) , police, fire and emergency care, numerous welfare programs, the government and judicial systems-the vast majority of it created, maintained and paid for by the Euros, assisted by the taxes of the small minority of well-off Diverse. Also, there is the FBI, NSA, CIA, and the armed forces of the USA (another 500 billion a year) and other Euro countries, without which there would be no USA and little or no peace, security or prosperity anywhere in the world, and they have also been created, run and staffed largely by the Euros, who constitute most of the dead and wounded in every war (less an issue for Hispanics who serve in the military at about half the rate of Euros) and in every police force from 1776 to now. Without medicine and public health measures, most of their ancestors (and the whole third world) would have suffered and often died of leprosy, malaria, worms, bacteria, flu, tuberculosis, smallpox, syphilis, HIV, hepatitis, yellow fever, encephalitis, and the tech for high cholesterol and blood pressure, heart, cancer, and liver surgery, MRI, XRAY, Ultrasound etc., etc., has almost all been invented, administered and overwhelmingly paid for by the Euro 'racists' and 'white supremacists'.

You think colonialism was bad? Just think what the 3rd world would be like without it, or what it would be like living under the Nazis, communists or Japanese. This excuses nothing, but just points out the facts of history. But fine, let's undo the 'injustice' and pass a Back to Africa (and Latin America and Asia etc.) law providing funds to repatriate everyone. They could sell their assets here and most could live like kings there, but of course there

would be very few takers. And by the next century there will be 3 billion more Africans (the official estimate) and the whole continent will be a sewer, and 1 billion more Asians, and even India and China (who will add a few hundred million each) will look like paradise in comparison to Africa, at least until the resources run out (oil, gas, coal, topsoil, fresh water, fish, minerals, forests).

If you look on the net you find the Diverse incessantly whining about their oppression, even when it occurred decades or centuries ago, but I don't see how anything that's done by others, even today, is my responsibility, and much less so in the past. If you want to hold every Euro responsible for what the vast majority now alive are completely innocent of, then we want to hold all Diverse responsible for all the crimes committed by any of them here over the last 400 years, and for their share of all the tens of trillions we spent to build and defend the USA and to keep them safe, healthy and well fed. Yes most blacks and Hispanics are poor due to historical factors beyond their control, just as Euros are often richer due to historical factors beyond theirs, but the important points are that we now alive did not cause this, and that here, as almost everywhere that the Diverse are a significant percentage, they commit most of the crime, collect most of the welfare, pay the least taxes and continue breeding excessively and dragging their countries and the world into the abyss.

Consider as well that the evils of colonialism are only prominent because they were recent. If we look carefully, we find that nearly every group in every country has an endless history of murder, rape, plunder and exploitation of their neighbors that continues today. It's not far off the mark to suggest that the best thing that could happen was to be conquered by the Euros.

Once again, keep in mind that there is not and almost certainly will never be any evidence of a significant genetic difference between Euros and Diverse and that their limitations are almost certainly due to culture. The problem is not the Diverse nor Euros, but that people are selfish, stupid, dishonest, lazy, crazy, and cowardly and will only behave decently, honestly, and fairly if forced to do so. Giving people rights instead of having privileges they must earn is a fatal mistake that will destroy any society and any world. In the tiny

groups in which we evolved, where everyone was our relative, reciprocal altruism worked, but in a world soon swelling to 11 billion, this impulse to help others is suicidal. The world is totally preoccupied with terrorists, but their effects are actually trivial compared e.g., to traffic accidents, murders, drug addiction, disease, soil erosion etc., and every day the 7.7 billion do vastly more damage to the world just by living. The mothers of the third world increase the population by about 200,000 every day, and so do hugely more damage every hour than all the terrorists worldwide will do in the whole 21st century (until they get their hands on the bomb). Just the Diverse in the USA in one year will do far more damage to the USA and the world by destroying resources, eroding topsoil and creating CO2 and other pollution than all terrorism worldwide in all of history. Is there even one politician or entertainer or business person who has a clue? And if they did would they say or do anything— certainly not—who wants to be attacked for 'racism'.

People everywhere are lazy, stupid and dishonest and democracy, justice and equality in a large Diverse welfare state are an open invitation to limitless exploitation of their neighbors and few will resist. In 1979 7% of Americans got means tested govt. benefits while in 2009 it was over 30%. Food stamps rose from 17 million persons in 2000 to about 43 million now. In the first few years of Obama over 3 million enrolled to get 'disability' checks and over 20% of the adult population is now on 'disability' which, according to the Census Bureau, includes categories such as "had difficulty finding a job or remaining employed "and "had difficulty with schoolwork". There are now almost 60 million working age (16 to 65) adults who are not employed or about 40% of the labor force. Illegal families get about $2.50 in direct benefits for every dollar they pay in taxes and about another $2.50 indirect benefits so they are a huge and ever increasing drain, in spite of fake 'news stories' on the net about their great value.

Interest payments on our national debt are projected to rise to 85% of our total federal income by 2050. About half of our debt is owned by foreign govts., about a quarter by China, and if China continues to buy our debt at current rates, very soon our interest payments to them will cover their total annual military budget (ca. 80 billion vs U.S. of ca $600 billion) and (depending on

interest rates) in a few years they would be able to triple or quadruple their military expenditures and it would all be paid for by US taxpayers. Actually, I have not seen it noted, but their lower costs mean that they are actually spending maybe 300 billion. And it is rarely mentioned why the US military budget is so enormous, and how it ties into the high life style and huge govt. subsidies in Europe and worldwide for that matter. The USA is the world's policeman, providing technology, money and troops for keeping the peace and fighting wars worldwide and is too shy (or stupid) to ask the other countries to pay their share until the recent comments by Trump. To a significant extent, the ability of the Europeans and countries worldwide to have a high standard of living is due to the American taxpayers (without of course being asked) paying for their defense for the last 75 years.

The CIS reports total immigration will reach about 51 million by 2023, about 85% of the total population increase (all the rest due to the Diverse already here) and will soon comprise about 15% of the total population—by far the largest percentage in any big country in recent history. It was reported that the Dept. of Homeland Security New Americans Taskforce was directed to process the citizenship applications of the 9 million green card holders ASAP to try to influence the 2016 election.

The federal govt. is a cancer which now takes about 40% of all income from the minority who pay significant taxes and federal govt. civilian employees are hugely overpaid, averaging ca. $81,000 salary and $42,000 benefits while private employees get about $51,000 salary and $11,000 benefits. About 25% of all the goods and services produced in the USA are consumed by the govt. and about 75% of total govt. income is given out as business and farm subsidies and welfare. If all federal taxes were increased by 30% and spending was not increased, the budget might balance in 25 years. Of course, the spending would increase immediately if more money was available, and also the economy would take a huge hit as there would be less incentive to earn or to stay in the USA and business investment and earnings would drop. It is estimated that private sector compliance with govt. regulations costs about 1.8 trillion a year or about 12% of our total GDP, and of course it is growing constantly, so we waste more on govt. paperwork every year than

the GDP of most countries. The main push for evermore confiscation of our money (years of our working lives) by the govt. is the communism/socialism/fascism forced on us by the rapid increase of Diverse, but being the world's police force for free has cost us trillions, which also translates into years of our working lives as detailed elsewhere here.

The poor are almost always spoken of as though they were somehow superior to the rich and it is implicit that we ought to make sacrifices for them, but they are only the rich in waiting and when they get rich they are inevitably exactly as loathsome and exploitative. This is due to our innate psychology, which in the small groups in which we evolved made sense, as everyone was our relative, but in a world that is fast collapsing due to the expansion of the Diverse it makes no sense. The poor care no more about others than the rich.

Marvelous that even Obama and the Pope speak about the coming horrors of climate change, but of course not a word about the irresponsible motherhood that is its cause. The most you get from any govt. official, academic or TV documentary is a meek suggestion that climate change needs to be dealt with, but rarely a hint that overpopulation is the source of it and that most of it for the last century and all of it from now on is from the 3rd world. China now creates twice the C02 of the USA and USA Diverse create about 20% of USA pollution, which will rise to about 50% by the next century.

Ann Coulter describes the outrageous story of what seems to be the only occasion on which Americans actually got to vote on the immigration issue—what some call "the great Prop 187 democracy ripoff".

In 1994 Californians, outraged to see ever more Hispanics crowding into the state and using up tax money, put on the ballot Proposition 187 which barred illegals from receiving state money. In spite of the expected opposition and outrageous lies from all the self-serving, boot licking Democrats and other left wingers, it passed overwhelmingly winning 2/3 of white, 56% of black, 57% of Asian and even 1/3 of Hispanic votes (yes, many middle and upper class Hispanics realize being taken over by Mexico will be a disaster). Note that all these people are 'racists' or 'white supremacists' (or in slightly more

polite columns of the Carlos Slim Helu controlled NY Times etc. 'bigots' or 'nativists') according to the current use of this word by a large percentage of liberals, many Hispanics, the Sierra Club, the ACLU and even Nobel Prize winning economist Paul Krugman (who recently called Trump a 'racist' for daring to tell the truth while defending the USA from annexation by Mexico).

It even carried the hopeless Republican candidate for Governor, Pete Wilson to a landslide victory, with 1/3 of his voters stating his support for Prop 187 was their reason for voting for him. However, the "ACLU and other anti-American groups" (Coulter) brought suit and it was soon struck down by a Democratic appointed (i.e., 'honorary Mexican') District Court Judge for being unconstitutional (i.e., protecting Americans rather than aliens). As with the 1898 and 1982 Supreme Court decisions giving citizenship to anyone who is born here, it was another hallucinatory interpretation of our laws and a clear demonstration of the hopelessness of the court system, or any branch of the government (at least a Democrat dominated one) in protecting Americans from a third world takeover. It has been suggested that the ACLU change its name to the Alien Civil Liberties Union and that it, along with the many other organizations and individuals working to destroy the USA, be forced to register as agents of a foreign government or preferably, be classified as terrorists and all their employees and donors deported or quarantined.

In spite of this, neither the state nor federal govt. has done anything whatsoever to prevent the takeover, and Coulter notes that when G.W. Bush ran for president, he campaigned in America with the corrupt Mexican president Gortari (see comments on Carlos Slim below), had brother Jeb 'Illegal Immigration is an act of love' Bush speak in Spanish at the RNC, and after winning, gave weekly radio addresses in Spanish, added a Spanish page to the White House website, held a huge Cinco de Mayo party at the White House, and gave a speech to the blatantly racist National Council of La Raza, in which, among other outrages, he promised $100 million in federal money (i.e., our money) to speed immigration applications! Clearly with both the Republican and Democratic parties seeking annexation by Mexico, there is no hope for the democratic process in America unless it is drastically changed.

California is the 6th largest in economy in the world, ahead of France, Brazil, Italy, South Korea, Australia, Spain, India, Russia, and Canada, and more than double that of Mexico, and in about 10 years, when their 10 million kids grow up and the total Hispanic population of Calif is about 22 million (counting only legals), they will own the state and it will have been annexed by Mexico.

In recent years, Calif. Governor Brown signed legislation granting drivers licenses to illegals, and paying for free medical care for their children (i.e., of course we the taxpayers pay). He agreed to let noncitizens monitor polls for elections, and they have been appointed to other government positions such as city councils without state govt. approval. He also forced all state officials to commit obstruction of justice by signing a law known as the Trust Act (i.e., trust they won't rob, rape, murder, sell drugs etc.), which specifies that unless immigrants have committed certain serious crimes, they cannot be detained (for delivery to the feds for deportation) past when they would otherwise become eligible for release. The batch of new "lets become part of Mexico" laws also included one that would allow immigrants without legal status to be admitted to the state bar and practice law in California. But he vetoed the bill allowing illegal aliens to serve on juries. So, the only thing that prevented the final step in turning over the Calif. Courts to Mexico was the arbitrary decision of one man! However, it won't be more than a few years before an Hispanic is Governor and then this and endless other atrocities will ensue, including presumably giving illegals the right to vote perhaps by passing another state law that violates or obstructs the federal one. In any case, there will soon by little distinction in California between being a citizen of the USA and a citizen of any other country who can sneak across the border. Note that as usual the Citizens of California were never permitted to vote on any of these issues, which were passed by the Democratic controlled state legislature. Why don't they just be honest and change the name to Democratic Party of Mexico? At least they should be forced to register as the agent of a foreign govt.

It is certain that California (and by the end of the century the USA) is lost to

civilization (i.e., it will be like Mexico, which of course will be far worse by then) unless the govt. sends federal troops into California to deport illegals and arrest all those (including numerous elected officials) who are violating federal law. Even this will only slow up the catastrophe unless a law is passed terminating anchor babies (i.e., those getting citizenship because they are born here), preferably retroactively to 1982 or better to 1898, and rescinding citizenship for them and preferably all those who gained it from them. Hard to get precise statistics, as its 'racist' to even think about it, but in Stockton, California and Dallas, Texas about 70% of all births are to illegals and maybe 90% of the total counting all Hispanics, and of course the bills are almost all paid by Euros and 'rich' Diverse via forced taxation, which of course they never get to vote on.

To end birthright, a new law has to be passed and not an old one repealed, as there is no such law— this was an utterly arbitrary opinion of Justice Willie, "anchor baby" Brennan and only a handful of justices ever voted for this hallucinatory interpretation of the law. Those who want to see how the Supreme Court destroyed our country by eroding the boundary between being an American citizen and a person who was passing through (and the lack of basic commonsense in the law and the hopelessness of the American legal system- and the contrary opinions of legal experts) can consult Levin's 'Men in Black' or see United States v. Wong Kim Ark, 169 U.S. 649 (1898)(yes it was a Chinese who began the assault on America over a century ago) where 6 lawyers (i.e., justices of the court) granted citizenship to the children of resident aliens and Plyler v. Doe, 457 U.S. 202 (1982) where 5 lawyers (with 4 disagreeing) granted citizenship to the children of illegal aliens and anyone giving birth while visiting. If just one of the 5 morons who voted for this had changed their mind we would have maybe 10 million fewer on the welfare rolls now and perhaps 50 million fewer by 2100. Of course, none of the other 450 million or so adults alive between then and now have ever been permitted to vote on this or any of the basic issues leading inexorably to collapse. As we now see in the media every day, in a 'representative' democracy what is represented is not America's interests, but egomania, greed, stupidity and third world supremacism.

How many people did it take to hand America to Mexico? For the TKO Immigration disaster in 1965 there were 320 representatives and 76 senators, and for anchor babies the two Supreme Court decisions totaling 11 lawyers, most of these 'outstanding citizens' now dead, so out of the approx. 245 million adult Americans citizens alive now, about 120 very senior citizens actually voted for the handover. As clear a demonstration of the hopelessness of representative democracy (as practiced here) as one could want.

Clearly, if America is to remain a decent place to live for anyone, the 1965 act, and all subsequent ones, need to be repealed by a law that puts a moratorium on all immigration and naturalization, and preferably rescinds citizenship for everyone naturalized since 1965 (or preferably since the first absurd birthright ruling in 1898), along with all their relatives and descendants. All their cases could be reviewed and citizenship conferred on select individuals who scored high enough on a point scale, with welfare recipients, the chronically unemployed, felons, and their descendants ineligible, those with college or medical degrees, teachers, engineers, business owners etc., getting points towards eligibility.

Following Ann Coulter ('Adios America'), we note that corporate tax in the USA is the highest in the world at 39% and as the govt. continues to raise taxes to support the half of the country that is on some kind of welfare (if one includes social security, unemployment, food stamps, housing subsidies, welfare and veterans benefits), inevitably capital and jobs will leave, and entering the next century with vanishing resources, and since the entire annual population increase of 2.4 million is now Diverse, that means about 200 million more of them (for a total of around 350 million out of about 500 million) by 2100, and a drastically reduced standard of living and eventual collapse is inevitable.

Regarding the tax situation, in 2013 those with gross incomes above $250,000 (nearly all of them Euros) paid nearly half (48.9%) of all individual income taxes, though they accounted for only 2.4% of all returns filed and their average tax rate was 25.6%. The bottom 50% of filers (those making under $34,000-maybe half Diverse and half Euros) paid an average of 1.2% federal

income tax for total share of 2.4% while the next 35% of filers (thosemaking$34k to 69k) averaged 21% tax rate for a total share of 10.5% of total federal income tax collected. So, it is obvious that the upper and upper middle class are giving the poor a largely free ride, and that we already have one foot in communism. However, we must not forget the $2.5 billion a day the US is going into debt and the total 80 trillion or more unfunded liabilities (e.g., social security and medicare), which will have to eventually be paid by some combo of increased taxes and decreased benefits to their descendants. Consider this: "When we combine the populations of non-payers and non-filers and look to see what overall percentage of each group is not paying taxes, we find that: 50.7 percent of African American households pay no income taxes, 35.5 percent of Asian American households do not, 37.6 percent of White American households do not, and 52 percent of (legal) Hispanics pay no income taxes." There are about 5X as many Euros (whites) as blacks and 4X as many whites as Hispanics in the USA, and there are about the same % of whites and blacks on welfare (39%) and about 50% of Hispanics, so percentage wise that means blacks are about 5X and Hispanics about 8X as likely to be on welfare as whites.

Including property taxes, sales taxes etc. brings the average middle class ($34k to $69k income) tax up to about 30%, so 4 months/year or about 15 years labor in a 50 year lifetime goes to the government.

Counting all support as enumerated above (i.e., not just food stamps etc., but the poor's fair share of all other expenses) the average middle class family works roughly 5 weeks/year or 5 years of their working life to support the poor. Neither mass immigration, nor slavery, nor anchor babies, nor excessive breeding, nor unemployment, nor crimes and drugs are their fault, but the middle and upper class pay for the poor, and their kids will pay more (likely at least 10 years of their 50 year working life well before 2100) until the standard of living and quality of life is about the same as that of Diverse countries, and they will both drop continually every year until collapse.

Of course, every statistic has a counter statistic, but as a rough guide we find a recent study that found that 37% of Hispanic immigrant households got the

majority of their income from welfare while 17% of blacks did (whites were not reported but I would guess about 10%). Of the $ 3.5 trillion budget, about 595 billion is deficit and about 486 billion goes to welfare, so eliminating welfare would almost balance it and eliminating all the costs associated with persons and their descendants naturalized since 1965 would put the USA solidly in the black and would probably allow paying off the $18 trillion national debt before the end of the century, while implementing a Naturalized Citizens Repatriation Act would likely allow this closer to midcentury.

As I write this I see a 'news item' (i.e., one of the endless barrage of paid lies planted there every day by the Diverse) on Yahoo that tells me that illegals are doing us a big favor as the majority are working and pay about $1000 each tax per year. But they don't tell us that they cost the country maybe $25,000 each in direct traceable costs and if you add their share of all the other costs (to maintain the govt. the police, the courts, the army, the streets etc., etc.) it's likely double that. As Coulter tells you on p47 of Adios America, a college educated person pays an average $29k taxes more per year than they get back in govt. services. Legal immigrants however get back an average $4344 more than they pay, while those without a high school degree get back about $37k more than they pay. She says that about 71% of illegal households get welfare.

About 20% of US families get 75% of their income from the govt. and another 20% get 40%. In the UK, which is about on a par with the USA on its Diverse path to ruin, about 5 million persons or 10% of able adults live totally on welfare and have not worked a day since the Labour govt. took over in 1997, and another 30% receive partial support. Greece, famous for it's recent huge bailout, is a typical case of how the masses always drag a country into chaos if permitted. People normally retire on full govt. pensions in their 50's and as early as 45, and when retirement at 50 was permitted for a couple of hazardous jobs like bomb disposal, it soon was enlarged to cover over 500 occupations including hairdressers (hazardous chemicals like shampoo) and radio and TV announcers (bacteria on microphones—no I am not joking!). People often praise European countries for their generous welfare, but in fact it is mainly possible because nearly all their defense since the 50's (about 10

trillion in direct costs and perhaps another 10 trillion indirect) has been paid for by the USA, i.e., by the 20% of US taxpayers who pay any significant tax, plus much of the 18 trillion debt. In fact, like all the world, they would not even be independent countries if not for the USA who defeated the Germans (twice) and Japanese and kept the communists under control for half a century. So not only is the U.S. bled dry by the poor and Diverse here, but we pay for them all over the world, as well as helping the rich there get richer. Typical of all Europe, in France, where the Muslims have become a huge problem, even when not slaughtering people, most of them are on welfare, paid for in part by the USA. For about a decade the biggest voting bloc in the U.N is the Organization of Islamic Cooperation which controls e.g., the Human Rights Council, where they allow only the rights permitted by Islamic law, and so forget women's rights, children's rights, gay rights, freedom of religion, free speech etc. and in fact freedom of any kind. And of course, due to their relentless suppression of women and lunatic breeding, they will increase from about 1/5th of the world now to about 1/3 by 2100.

Islam is defended with such ferocity because in the poor 3rd world countries it has been the only defense against selfishness and it provides poor men with a guarantee of reproduction and survival. The same used to be the case for Christianity. It is also clear that as the 22nd century approaches and America collapses, China will replace it as the 'Great Satan' since it will be dominant worldwide, protecting its ever-growing investments and Chinese citizens, and eventually doing whatever it wants, as 'Diversification' causes America to lose military superiority and the money and will to fight. And of course, the Chinese will not follow America's path and be 'diversified' into collapse, unless via some great misfortune they become democratic.

A bit off the mark but too nice to pass up is a lovely example of devolution (dysgenics) that is second only to overpopulation in bringing about the collapse of industrial civilization. U.K. Pakistanis, who often import their cousins to marry, and so are inbreeding with up to 5 children a family, sometimes with multiple wives, produce 30% of the rare diseases in the UK, though they are 2% of the population. Of course, most are on welfare and the defectives result in huge expenses for full time nursing care and special

education (for those not both deaf and blind). And the European High Court ruled they have to pay full spousal benefits to all the wives and can't draw the line at two.

A good part of Coulter's book is spent on crime, and we should first note (Coulter does not seem to, though I expect she knows) that it is rarely considered that it is hugely underreported, especially among the poor and Diverse. Thus, the BJS says that about 3.4 million violent crimes per year go unreported and the figures for nonviolent ones (burglary, robbery, assault, petty theft, vandalism, drug dealing, etc.) must be in the hundreds of millions, disproportionately committed by (and suffered by) the Diverse. One finds that the percent of adult males incarcerated for whites is 0.7, for Hispanics 1.5 and for blacks 4.7. It appears impossible to find any precise national figures for the cost of incarceration but $35K/year seems about right and perhaps $50K for the legal system and perhaps another $50k in medical and psychological costs, rehab programs, loss of work by their victims etc. According to the BJS non-Hispanic blacks accounted for 39.4% of the prison and jail population in 2009, while non-Hispanic whites were 34.2%, and Hispanics (of any race) 20.6%. According to a 2009 report by the Pew Hispanic Center, in 2007 Latinos "accounted for 40% of all sentenced federal offenders--more than triple their share (13%) of the total U.S. adult population". Again, keep in mind there is not and almost certainly will never be any evidence of a significant genetic difference between Euros and Diverse in psychology, or IQ, and that their greater incidence of problems must be wholly due to their culture.

If one counted only illegals, the crime and imprisonment rate would likely be double that reported for legal Hispanics. As Coulter notes (p101-2) it's impossible to get the actual figures for immigrant crime since it's of course 'racist' to even suggest they should be collected (and as noted, all crime among Diverse is greatly underreported and many Hispanics are misclassified as whites), but it's definitely above that stated, so their actual rate could be near that of blacks. One set of data showed about 1/3 of the 2.2 million state and local prisoners are foreign born and maybe another 5% are

American born Hispanics and another 30% black, leaving about 32% white. The foreign born were 70% more likely to have committed a violent crime and twice as likely a class A felony. As Coulter notes, virtually all immigrant groups have a higher crime rate than natives. As the invasion continues, bribery and extortion will see huge increases as they rise to the third world standard. Bribes (the mildest form of extortion) in cash or equivalent is the normal interaction between people in the third world and police, the military, customs and immigration officers, health and fire inspectors, teachers, school admissions officers, and even doctors, surgeons and nurses. I am not guessing here as I spent a decade of my life in the third world and experienced and heard countless stories about all of the above. As time passes, we can expect this to become routine here as well (first of course in California and the Western states) and the nationwide norm thereafter. In addition to continued increases in crime of all kinds we will see the percentage of crimes solved drop to the extremely low levels of the third world. More resources are devoted to the solution of murders than any other crime and about 65% are solved in the USA, but in Mexico less than 2% are solved and as you get further from Mexico City the rate drops to near zero. Also note that the rate here used to be about 80%, but it has dropped in parallel with the increase in Diverse. Also 65% is the average but if you could get statistics I am sure it would rise with the percent of Euro's in a city and drop as the percent of Diverse increases. In Detroit only 30% are solved. If you keep track of who robs, rapes and murders, it's obvious that black lives matter lots more to Euros than they do to other blacks.

Spanish may become the official and mandatory language and Roman Catholicism the official religion, and of course the Mexican cartels will be the dominant criminal organizations, at least for the Southwestern states by midcentury and likely the whole country by 2100.

Of course, as Coulter points out, it's very hard to get statistics on race and crime, or increasingly on race and anything, as its considered 'racism' even to ask and the govt. refuses to collect it. Finding the truth is made much more difficult since Hispanic special interest groups (i.e., third world supremacists), abetted by Euro liberals, who have lost or sold whatever

common sense or decency they may have had, are hard at work spreading disinformation with hundreds or even thousands of false or misleading items on the net every week. She does not seem to mention the massive deception facilitated by Yahoo, Bing, Facebook and others, who present among their news items paid disinformation which presents 'news' that is deliberately false or hugely misleading, such as the item mentioned above which says that illegals are a good thing as they are paying taxes.

In spite of being given a largely free ride, the Diverse take it all for granted (especially as it's 'racist', 'hate' and 'white supremacist' to point out their free ride, so you won't find it in the major media) and have no problem suing the police, hospitals, and every branch of government for any imagined infraction. The Euros should get a clue and sue them back! They and the US govt, now that Trump is president, could file millions of suits or criminal cases against people who riot in the streets, picket and protest disrupting traffic, smashing windows and causing business losses, psychological trauma, etc. Sue and/or arrest all the criminals and their families for the damages to property, police, loss of business income and work, etc. Also sue the police and every branch of government for failing to protect them every time a crime is committed, especially by illegal Diverse.

As I write this the parents of a young San Francisco woman murdered by an illegal alien criminal, who had been deported numerous times, and then shielded from deportation by the San Francisco police (obstruction of justice), is suing them and the feds (and they should sue the board of Supervisors and Governor Brown and the state legislature who voted for the sanctuary rules and Trust Act as well). Tens of thousands are robbed, assaulted, raped or murdered by Diverse, and perhaps 100 million victimized in lesser ways every year, and the injured parties (most often Diverse) should sue every time. To facilitate this, the Euros could establish a fund and various organizations aimed to eliminate illegals and crime against Euros. And of course, all the countries that foreign born criminals come from should be forced to pay the cost of policing and prosecuting them and of keeping them here—welfare, medical care, schooling, and their share of all the goods and services mentioned above, including national defense. Mexico should pay all

the costs of policing the border and for all the crimes and for all the upkeep of illegals here since day one—i.e., back to say 1965. And they and Colombia should pay for the cost of drug enforcement, addict treatment and jailing, and say a $20 million fine every time someone is raped, disabled or murdered by a drug addict or by an illegal or a naturalized citizen or descendant of a person originating in their country. If they won't we could expel everyone born there and cut off all trade and visas, or just confiscate their oil, mineral and food production. Like many of the ideas here it sounds bizarre because the cowardice and stupidity of 'our' leaders (i.e., not actually ours as we are never asked) has gotten us so used to being abused. We are the last country that should put up with abuse but the politicians and left wing morons have made us the easiest mark on the planet. Yes 9/11 is the most striking abuse, but in fact we suffer as many deaths and injuries from the Diverse every year (e.g., just from drugs and addicts or just from wars), and far more damage every day, if you extrapolate the consequences of their presence here into the future.

Much controversy was generated when Trump mentioned we were letting rapists into the country, but he was just stating the facts. Coulter recounts a few of the more outrageous immigrant rape crimes committed here (the publisher cut the book in half and she says she can easily produce 50 cases for every one cited, though most crimes in Diverse communities are never reported, often because they are committed by the Hispanic gangs who control them), noting a study in which Latino women here reported childhood sexual abuse at about 80X the rate of other American women, and since it seems likely many did not want to talk about it, it could be higher. She notes that in much of Latin America, raping teenagers is not considered a crime (e.g., the age of consent in Mexico is 12) and in any case, it is rare that anything is done about it, since it's often connected to gang members or their families and if you protest you die.

Coulter notes that illegals have made large areas of South Western USA public lands and parks unsafe and some have been closed. Half of some 60 forest fires on federal or tribal land between 2006 and 2010 were started by illegals, many of them set deliberately to avoid capture. The cost of fighting

these 30 alone might pay for a good start on a secure border fence.

I assume everyone knows about the massive marijuana growing operations conducted by the Mexican cartels in our national forests. In addition to the erosion and pollution, it is the norm for growers to kill numerous animals and threaten hikers. Most depressing of all is the sellout of the Sierra Club (who suddenly changed their tune after getting a $100 million contribution from billionaire David Gelbaum with the proviso that they support immigration—clearly confused as his right hand protects nature while the left destroys it), who are now devoted to mass immigration, denouncing anyone opposed as "white racists" even when they are Diverse. So, they are another group that should be made to register as an agent of a foreign government and their executives and major contributors made to join the other criminals quarantined on an island (the Aleutians would be perfect but even Cuba would do) where they can't do more harm. Considering the blatant trashing of California by Hispanics, and the clear as day end of nature in America as the immigrants about double the population during the next century or so, this is truly amazing from one viewpoint, but cowardice and stupidity are only to be expected.

One murder in the USA is said to total about $9 million lifetime costs and if they get death it is several million more. At about 15,000/year that would be about $150 billion/year just for homicides-most by Diverse. Mexico has about 5X the murder rate of the USA and Honduras about 20X and your descendants can certainly look forward to our rate moving in that direction. Coulter notes that Hispanics have committed about 23,000 murders here in the last few decades. As I write, this item appeared on the net. "In an undated file photo, Jose Manuel Martinez arrives at the Lawrence County Judicial Building in Moulton, Ala., before pleading guilty to shooting Jose Ruiz in Lawrence County, Ala., in March 2013. Martinez has admitted to killing dozens of people across the United States as an enforcer for drug cartels in Mexico." Not of course rare, just one of the few to make the headlines recently.

Figuring about 2.2 million prisoners (over 1% of the adult population) and a

cost to put them in jail from the start of their criminal career of maybe $50,000 each or about $100 billion and the cost to keep them there of about $35,000 each or about 75 billion means a minimum of $150 billion a year, not including other governmental and social costs. I don't see any really clear estimates on the net for the total cost of crime in the USA, but in 2013 it was estimated that violent crime alone cost the UK (where guns are much less frequent and the Mexican and Colombian mafias don't operate significantly, ca. $150 billion or about $6000/household, or about 8% of GDP, but the USA has a much higher percentage of immigrants, guns and drugs, so including all the nonviolent crimes and figuring only 5% of the GDP, that would be about 900 billion per year. Figuring about 60% of crime due to Diverse, or maybe 80% if you count that of Euros addicted to drugs imported by Diverse, we pay something like 700 billion a year to support Diverse crime.

Of course, all those guilty of felonies, regardless of national origin, history or status could have their citizenship rescinded and be deported or quarantined on an island, where their cost of upkeep could be from $0 to $1000/year rather than $35,000 and it could be made a one-way trip to avoid recidivism. Yes, its sci-fi now, but as the 22nd century approaches and civilization collapses, the tolerance of crime will come to an end of necessity. For now, nothing will be done, and crime here will reach the levels in Mexico as the border continues to dissolve and environmental collapse and approaching bankruptcy dissolve the economy. Inside Mexico in 2014 alone, 100 U.S. citizens were known to have been murdered and more than 130 kidnapped and others just disappeared, and if you add other foreigners and Mexicans it runs into the thousands. Even a tiny lightly traveled country like Honduras manages some 10 murders and 2 kidnappings a year of US citizens. And of course, these are the best of times—it is getting steadily worse as unrestrained motherhood and resource depletion bring collapse ever closer.

Euros hear constantly about how bad they are not to want to give the Diverse even more. OK fine, lets agree to do it provided the third world country they are from enforces legislation that gives all foreigners in their country, legally or not, citizenship for their babies, welfare, free food, free medical care, free

schooling, immunity to deportation, emergency care, drivers licenses, license to practice law, right to serve on juries, right to bring in all their relatives (who also get all these rights), right to setup organizations that help them to lie on immigration forms, to evade deportation, to suppress free speech and to subvert the political process so that they can take over the country. Actually, let's make it easy and do it if even one of their countries implements just one of these. Of course, it will never happen.

Naturally, those with every kind of mental or physical deficiency are dissatisfied with their level of welfare and are getting organized too. Those with autism, actually a spectrum of genetic deficiencies due to as many as 1000 genes, that vary greatly, are now campaigning to be regarded as not deficient but 'neurodiverse' and 'neurotypicals' should regard them as peers or even their superiors. No problem for me if someone wants to have a 'friend' or spouse who cannot experience love or friendship and who feels the same when they die as they do when their goldfish does (except being more annoyed by the greater inconvenience). And those with more than mild cases will never hold a job and will be a burden to their relatives and society (i.e., the minority who pay taxes) all their lives, and have a strong tendency to pass the problem on to any offspring they have, so it will likely increase continually, the same as hundreds of other genetic problems with significant heritability. As diagnosis has improved, so has the incidence of autism, which now exceeds 1%, as does that for schizophrenia, schizotypal disorders, ADHD, drug addiction, alcoholism, alexithymia, low IQ, depression, bipolar disorder, etc., etc., so perhaps the combined incidence of disabling mental disorders exceeds 10% and those with physical problems who need partial or complete lifelong support is probably similar, and both are rising in number and percent, the inevitable result of 'civilization'. Clearly, as the economy collapses, the costs of health care rise, and an ever-larger percentage are nonworking elderly or mentally or physically disabled, this lunatic system will collapse-i.e., the USA will likely have about the same handouts for everyone as third world countries by the 22nd century—none.

Coulter comments on Mexican citizen Carlos Slim Helu (currently the world's third richest person) in the context of the near universal lying about and

evasion of immigration issues by the New York Times and other media. He gave a huge loan to the Times a few years ago, to save it from bankruptcy, and this likely accounts for its subsequent failure to cover immigration issues in a meaningful way. Slim is the world's premiere monopolist and his companies control 90% of the Mexican telephone market and many of its major industries (Mexican's refer to their country as Slimlandia). His wealth is the equivalent of roughly 5% of Mexico's GDP. To add perspective, since the USA has about 15 times Mexico's GDP, to be comparable, Bill Gates or Warren Buffet would have to be worth about a trillion dollars each, or about 20X their worth. California is the biggest money making US state for Slim, whose take of Mexican goods and services is about $140 million/day. To get the flavor of how things were when Slim managed to acquire the Mexican telephone company (and what can be expected here soon), Gortari (chosen by G.W. Bush to campaign with him) was president of the vicious Mexican political monopoly PRI, and in subsequent years Gortari's brother was found murdered, his relatives were apprehended by Swiss police when they tried to withdraw $84 million from his brother's bank account, and he fled Mexico for Ireland, where he remains. These are among the reasons Coulter calls Slim a robber baron and a baneful influence on Mexico and America. She notes that about $20 billion of Slim's yearly income from his telephone monopoly comes from Mexicans living here. He is Lebanese on both sides, so Mexico has experienced it's own foreign takeover.

The bleeding hearts insist Americans show ever more "humanity" and guarantee our own collapse to help the mob, but what humanity do the Diverse show? They breed like rabbits and consume without restraint, thus condemning everyone, including their own descendants, to Hell on Earth. There is nothing noble about the poor—they are just the rich in waiting. Showing the typical oblivion of the establishment, our Secretary of State Kerry praises China for 'lifting 200 million people out of poverty' but fails to note this is unsustainable and that 11 billion (by 2100) all trying to stay out of poverty guarantees the collapse of the world. China's higher QOL, like our own, is only temporary, bought at the cost of their own descendant's and the worlds futures.

How much Quality of Life (QOL- a general measure including wealth, crime rate, stress, traffic, drug problems, happiness etc.) might Americans gain by various measures? Banning anchor babies might up QOL 5% by mid-century and 10% by the end relative to doing nothing. Making the ban retroactive to 1982, or preferably to 1898, and thus deporting most of those naturalized by being related to anchor babies, might raise QOL another 5% immediately. Banning immigration might raise it another 10% by end of century, while making the ban retroactive to 1965 and deporting most immigrants along with their descendants and naturalized relatives might give Americans (Diverse and Euros) another 20% more QOL immediately.

And there might be a Back to Africa or Slavery Restitution Act which sent all blacks, or at least those on welfare, unemployed or in prison, back to their homelands so we would never again have to listen to their inane complaints about being kidnapped (as noted, they never consider that if not for slavery they would not exist and if not for colonialism and Euro technology maybe 90% of the people in the third world would not exist), not to mention if not for Euro's they would now be living (or dying) under the Nazi's or the Japanese or the communists. Of course, one could do this on a case by case basis, keeping all the skilled (e.g., medical and high tech personnel). Instead of or prior to the slow deportation process, one could also cancel the citizenship or at least the voting rights of all the naturalized citizens and their descendants since 1965.

The 42 million African-Americans (about 74 million by 2100) who account for 4.5x as many prisoners per capita as Euros, get a largely free ride for all essential services and welfare, take over and render uninhabitable large areas of cities, increase the crowding and traffic by about 13% etc., so they may decrease the QOL of all Americans about 20% on average but to unliveable for those who are in poor neighborhoods. Hispanics amount to about 17% (or about 25% including illegals) and they account for a minimum of 2.5X as many prisoners as Euros and have all the other issues, thus causing a QOL drop of about 30% or again to unliveable in areas they dominate, which soon

will include all of California and Texas. So, overall, it's a fair guess that deporting most Diverse would about double the QOL (or say from bearable to wonderful) right now for the average person, but of course much more increase for the poorer and less for the richer. If one compares likely QOL in 2117 (i.e., a century from now), if all the possible anti-diversity measures were adopted, relative to what it will be if little or nothing is done, I expect QOL would be about 3X higher or again from intolerable to fantastic.

After documenting the incompetence of the INS and the govt., and the countless treasonous and blatantly anti-white racist (in the original meaningful sense) organizations (e.g., the National Council of La Raza) helping to swamp us with immigrants (partial list on p247 of Adios America) Coulter says "The only thing that stands between America and oblivion is a total immigration moratorium" and "The billion dollar immigration industry has turned every single aspect of immigration law into an engine of fraud. The family reunifications are frauds, the "farmworkers" are frauds, the high-tech visas are frauds and the asylum and refugee cases are monumental frauds." Her book is heavily documented (and most data were left out due to size constraints).

As Coulter notes, a 2015 poll shows that more Americans had a favorable opinion of North Korea (11%) than wanted to increase immigration (7%,) but most Democrats, the Clintons, the Bush's, Obama, casino mogul Sheldon Adelson, Hedge Fund billionaire David Gelbaum, Carlos Slim, Nobel Prize winning economist Paul Krugman and megabillionaire Facebook founder Mark Zuckerberg don't want Americans to ever vote on it. She also mentions that then Florida Governor Jeb Bush (with a Mexican wife) pushed for a bill to give drivers licenses to illegal aliens (copying California) just 3 years after 13 of the 9/11 terrorists had used Florida drivers licenses to board the planes. Yes, the same Jeb Bush who recently called Illegal immigration "an act of love" (of course he means love for Mexico and hatred for the USA, or at least its Euros).

The inexorable collapse of the USA (and other first world countries in Europe are just a step or two behind, as they have let in Diverse who are producing

children at about 3 times Euro rates) shows the fatal flaws in representative democracy. If they are to survive and not turn into third world hellholes, they must establish a meritocracy. Change the voting age to 35 minimum and 65 maximum, with minimum IQ 110, proof of mental stability, lack of drug or alcohol dependence, no felony convictions, and a minimum score on the SAT test that would get one into a good college. But the sorry state of what passes for civilization is shown by a recent Gallup poll which found that about 50% of Americans believed the Devil influences daily events, and that UFO's are real, while 36% believe in telepathy and about 25% in ghosts. A yes on any of these would seem to be a good reason for lifetime exclusion from voting and preferably loss of citizenship as should a 'yes' or 'possibly' or 'probably' answer to "Do you think O.J. Simpson is innocent".

Perhaps it will lessen the pain slightly to realize that it is not only the American government that is moronic and treasonous, as versions of its suicide are happening nearly everywhere. In Britain, the National Children's Bureau has urged daycare teachers to report any 'racist' utterance of children as young as three. About 40% of Britons receive some form of welfare. London has more violent crime than Istanbul or New York and is said to have almost 1/3 of the world's CCTV cameras, which record the average citizen about 300 times a day. Of course, as usual, there are no trustworthy statistics for China, where some of the most successful electronics companies are in the CCTV business. The UK has the highest rate in Europe of STD's, unwed mothers, drug addiction and abortion. One fifth of all children have no working adult in their house, almost a million people have been on sick leave for over a decade, the courts forced the govt. to give a disabled man money to fly to Amsterdam to have sex with a prostitute, because to deny it would be a "violation of his human rights". The number of indictable offenses per 1000 rose from about 10 in the 1950's to about 110 in the 1990's in parallel with the increase in Diverse. Thanks to Mark Steyn's "After America", which is required reading for all bright, civilized Americans who want their country to survive.

Coulter points out the absurdity of politicians fawning on the Hispanic voters (Hispandering). If Romney had won 71% of the Hispanic vote instead of 27%

he still would have lost, but if he had won only 4% more of the white vote he would have won. In fact, 72% of voters are non-Hispanic white, so even if someone got ALL the nonwhite votes, a presidential candidate could still win by a landslide, as we saw in the Trump election. The problem is a sizeable percent of white voters are morons and lunatics who are unable to act in their own self-interest. The absurdity of letting average citizens vote was shown when many were seriously considering Ben Carson for president in 2016--a Seventh Day Adventist bible thumping creationist Detroit Ghetto homeboy of such obvious immaturity and stupidity that no sane country would permit him to occupy any public office whatsoever. He has however, the huge advantage that his defects give him much in common with the average American. It appears to me his limitations include autism-the reason for his famous "flat affect". Do not be fooled by his occasional simulations of laughter--autistics learn to mimic emotions at an early age and some even have successful careers as comedians. Famous comedian Dan Aykroyd had this to say about his Asperger's -- "One of my symptoms included my obsession with ghosts and law enforcement -- I carry around a police badge with me, for example. I became obsessed by Hans Holzer, the greatest ghost hunter ever. That's when the idea of my film Ghostbusters was born."

"Gentle Ben" Carson wants to outlaw abortion, even in cases of rape and incest, thinks we should ditch Medicare, and adheres to many weird conspiracy theories, such as the pyramids not being built by the pharaohs as tombs, but by the biblical Joseph for the storage of grain! He proposes to turn the Department of Education into a fascist overseer of proper morals, with students reporting professors who displayed political bias (i.e., anyone whatsoever) to the government so universities' funding could be cut. "I personally believe that this theory that Darwin came up with was something that was encouraged by the Adversary." The Adversary is a nickname for the devil; it's the actual translation of the word "Satan." He also dismissed the Big Bang, calling it a "fairy tale." Like all creationists, that means that he rejects most of modern science--i.e., everything that lets us make sense of biology, geology, physics and the universe and puts them on all fours with people who lived 100,000 years ago--i.e., Neanderthals. Of course, to the sane, intelligent and educated, "fairy tales" are about heaven, hell, angels and

devils, but these are at exactly the right level for the average low class American, Diverse or Euro. Hard to believe we could do worse than Nixon, Reagan, Obama and G.W. Bush, but it will happen, and your descendants will see an endless line of politicians who's only real qualifications are greed, dishonesty, stupidity, dark skin or a Spanish surname. In any case, it's inevitable in a mobocracy that morons, lunatics and the merely clueless will take over and run the show until it collapses, which is inevitable unless democracy as currently practiced changes radically and Diversity decreases.

Now that we have a reasonably sane, intelligent, honest person as president and enough Republicans in congress (the Democrats having sold out their country long ago) we can deport the illegals, but unless we terminate immigration and retroactively deport most of those naturalized since 1965, it will only slow the disaster and not stop it.

Hillary was preferable to Obama, who was trained as a constitutional lawyer, so he knew our systems fatal weaknesses, and how much further he could go in creating a communist state enforced by fascism, like his much-admired model Cuba. I can easily forgive Hillary for Benghazi and her emails and Bill for Monica, but not for their utterly cynical pardoning of clients of Hillary's brother Hugh, tax cheat Marc Rich and four Hasids convicted in 1999 of bilking the federal government of more than $30 million in federal housing subsidies, small business loans and student grants, in order to curry favor with N.Y. Jews. This is very well known and in fact everything I say in this article is easily findable on the net.

Even though our mobocracy is a slow-motion nightmare, if we had a direct democracy (as we easily could in the computer age) and people were actually polled on important issues, perhaps most of our major problems would be disposed of quickly. Suppose tomorrow there was a vote of every registered voter with an email address or smartphone on questions something like this:

Should all illegal aliens be deported within 1year? Should welfare be cut in half within 1year?

Should all convicted felons born in another country or one of whose parents were, have their citizenship canceled and be deported within 90days? Should all immigration be terminated except temporary work visas for those with special skills? Should all child molesters, rapists, murderers, and drug addicts have their citizenship canceled and deported, or if a native citizen, quarantined on an island?

So much the better if voting was restricted to those whose parents and/or all four grandparents are native born, who are non- felons, who have paid more than 5% of their income in taxes the last 3 years and passed mental health, current events and IQ tests. Again, the biggest benefactors would be the Diverse who remained here, but of course the majority will resist any change that requires intelligence or education to grasp.

I am not against a Diverse society, but to save America for your children, it should be capped at say 20% and that would mean about 40% of the Diverse here now would be repatriated. Actually I would not object to keeping the % Diverse we have now (about 37%) provided half the ones here were replaced by carefully screened Asians or by people from anywhere provided they are carefully screened (i.e., no criminals, mental or physical defectives, no religious nuts, no drug addicts, well-educated with a proven useful profession), and that they agree to have no more than two children, with immediate deportation if they produce a third, commit a major felony, or remain on welfare for more than one year. And no relatives are permitted entry. In fact, it would be a huge step forward to replace all the Euro criminals, drug addicts, mental cases, welfare users, and chronically unemployed etc. with suitable Diverse. Of course, it's impossible now, but as civilization collapses many amazing things will happen, all of them extremely unpleasant for billions of people, with the Diverse having the most suffering and dying. Coulter jokingly suggests inviting Israel to occupy the border with Mexico, as they have shown how to guard one. However, I would suggest really doing it—either giving them the Southern portion of each border state or perhaps just occupying the border section of Mexico (which we could do in a few days). Israel should be delighted to have a second country, since their

position in Israel will become untenable as the USA, France etc. lose the ability to be the world's policemen, and nuclear capable third world countries collapse. However, we should require the Israelis to leave the strict orthodox at home, as we already have enough rabbit breeding religious lunatics.

Speaking of the collapse of nuclear capable third world countries, it should be obvious that as this happens, possibly before the end of this century, but certainly in the next, with H Bombs in possession of fanatics, it is just a matter of time before they begin vaporizing American and European cities. The only definitive defense will be preemptive "nucleation" of any such country that collapses, or where Muslim radicals take over. It must be obvious to Israel that they will have no other choice but a preemptive strike on Pakistan, Iran and maybe others. Another lovely gift from third world mothers.

In a late 2015 poll by You.Gov, 29 percent of respondents said they can imagine a situation in which they would support the military taking control of the federal government – that translates into over 70 million American adults. And these again are the best of times. At this time in the next century, give or take a few decades, (much sooner in many third world countries), with industrial civilization collapsing, starvation, crime, disease and war worldwide, military coups will be happening everywhere. It's almost certainly the only cure for America's problems, but of course nobody will get to vote on it.

In sum, this is the American chapter of the sad story of the inexorable destruction of the world by unrestrained motherhood. Fifty-one years ago 396 US politicians voted to embrace the destruction of America by the third world, via the "no significant demographic impact" immigration act. Without the changes, they and the Supreme Idiots Court made (along with failure to enforce 'our' immigration laws), we would have about 80 million fewer people now and at least 150 million fewer in 2100, along with tens of trillions of dollars in savings. We would have a chance to deal with the immense problems America and the world face. But, burdened with a fatally fragmented (i.e., Diverse) population about twice the size we might have had, half of which will not contribute to the solution, but rather constitute the

problem, it is impossible. What we see is that democracy as practiced here and now guarantees a fatally inept government. Peace and prosperity worldwide will vanish and starvation, disease, crime, military coups, terrorism and warlords will become routine, perhaps in this century, certainly during the next.

To me it's clear that nothing will restrain motherhood and that there is no hope for America or the world regardless of what happens in technology, green living or politics anywhere. Everything tranquil, pure, wild, sane, safe and decent is doomed. There is no problem understanding the stupidity, laziness, dishonesty, self-deception, cowardice, arrogance, greed and insanity of hairless monkeys, but it ought to seem a bit odd that so many reasonably sane and more or less educated people could welcome into their country (or at least permit the entry and tolerate the presence of) large numbers of immigrants who proceed to take over and destroy it. Monkey psychology (shared by all humans) is only capable of seriously considering oneself and immediate relatives for a short time into the future (reciprocal altruism or inclusive fitness), maybe decades at most, so there is no internal restraint. Democracy is the ideal breeding ground for catastrophe.

Most people are neither smart nor well educated, but one can see collapse happening in front of us, and above all in the big urban areas and in the Southwest, especially California and Texas. Sheer laziness, ignorance and a lack of understanding of ecology and the nature of population growth is part of it, but I think that reciprocal altruism must have a big role. When we evolved in Africa we lived in small groups, probably seldom more than a few hundred and often less than 20, and so all those around us were our close relatives, and our behavior was selected to treat them reasonably well as they shared our genes (inclusive fitness) and would reciprocate good deeds (reciprocal altruism). We stopped evolving and began devolving, replacing evolution by natural selection with devolution (genetic degeneration) by unnatural selection about 100,000 years ago, when culture evolved to the point where language, fire and tools gave us a huge advantage over other animals, and there was no longer major selective force for changing behavior or increasing or maintaining health and intelligence. So, to this day we still have the tendency, when we do not feel in immediate physical danger, to act

in a more or less friendly manner to those around us. The temporary peace, brought about by advanced communications and weaponry and the merciless rape of the planets resources, has expanded this 'one big family' delusion. Though the more intelligent and reflective persons (which of course includes many Diverse) can see the danger to their descendants, those who are poorly educated, dull witted, or emotionally unstable, sociopathic, autistic, or mentally ill (i.e., the vast majority) won't see it or won't act on it. But how about Adelson, Zuckerberg, Gelbaum, Biden, Clinton, Obama, Krugman and a very long list of the rich and famous? They have at least some education and intelligence, so how can they want to destroy their country and their own children's future? Actually, they are no more well educated, perceptive and future oriented than the average college graduate (i.e., not very), and also they and their relatives live in gated communities and often have bodyguards, so they will not be seriously concerned about or even aware of trashed neighborhoods, beaches and parks, drive by shootings, home invasions, rapes and murders, nor about paying taxes or making ends meet. They are just not thinking about the fate of their great grandchildren, nor anyone's, or if it does cross their mind, like the vast majority, they don't have clue a about human ecology, nor dysgenics and can't see the inexorable path to collapse. Insofar as they do they will not risk personal discomforts by saying or doing anything about it (selfishness and cowardice).

A reader suggested I was talking about 'ethnic cleansing' of Diverse by Euros, but it's exactly the reverse. I had not actually thought of the destruction of America and industrial civilization by Diverse as genocide, but since the number of Euros of all types (and many groups of Diverse such as Japanese and Koreans) will steadily decline and their countries be taken over by Diverse, it does have that aspect, though it's the Euros failure to produce enough children that is responsible for their declining numbers. A few zealots (but not so few in the future as Muslims will increase from about 1/5 of the world to about 1/3 by 2100 stimulating the conditions which breed fanaticism) like Al Queda and ISIS want to eliminate all Euro's and the Arabs will certainly demolish Israel by and by, but otherwise there is little motivation to get rid of those who are giving you a free lunch (though of course few Diverse will grasp how big the lunch really is until it stops and civilization collapses).

However, as time passes and the competition for space and resources gets ever more desperate, genocide of all Euro groups may become an explicit goal, though mostly it will be far overshadowed by attacks of various Diverse groups on others, which has always been the case and always will. In any event, all Euro and many Diverse groups are certainly doomed--we are talking roughly 2100 and beyond, when the USA and Europe will no longer have the money or the will to suppress anarchy everywhere as they will hardly be able to control it at home.

Shocking as it is for me to come to these realizations (I never really thought about these issues in a serious way until the last 2 years), I don't see any hope for America or the other "democracies" (America has one foot in Fascism and the other in Communism already) without a drastic change in the way "democracy" works, or in it's complete abandonment. Of course, it's going to be pretty much the same elsewhere and both Euros and Diverse ought to pray the Chinese adopt democracy soon (so they collapse too) or they are doomed from outside and inside. That democracy is a fatally flawed system is not news to anyone with a grasp of history or human nature. Our second president John Adams had this to say in 1814:

"I do not say that democracy has been more pernicious on the whole, and in the long run, than monarchy or aristocracy. Democracy has never been and never can be so durable as aristocracy or monarchy; but while it lasts, it is more bloody than either. … Remember, democracy never lasts long. It soon wastes, exhausts, and murders itself. There never was a democracy yet that did not commit suicide. It is in vain to say that democracy is less vain, less proud, less selfish, less ambitious, or less avaricious than aristocracy or monarchy. It is not true, in fact, and nowhere appears in history. Those passions are the same in all men, under all forms of simple government, and when unchecked, produce the same effects of fraud, violence, and cruelty. When clear prospects are opened before vanity, pride, avarice, or ambition, for their easy gratification, it is hard for the most considerate philosophers and the most conscientious moralists to resist the temptation. Individuals have conquered themselves. Nations and large bodies of men, never." John Adams, The Letters of John and Abigail Adams

The most basic facts, almost never mentioned, are that there are not enough resources in America or the world to lift a significant percentage of the poor out of poverty and keep them there. The attempt to do this is bankrupting America and destroying the world. The earth's capacity to produce food decreases daily, as does our genetic quality. And now, as always, by far the greatest enemy of the poor is other poor and not the rich. Without dramatic and immediate changes, there is no hope for preventing the collapse of America, or any country that follows a democratic system.

So, it is clear that Ann Coulter is right and unless some truly miraculous changes happen very soon, it's goodbye America and hello Third World Hellhole. The only consolation is that we older folk can take comfort in knowing it will not be finalized during our lifetime, that those like myself who are childless will have no descendants to suffer the consequences, and, since the descendants of those who let this happen (i.e., nearly everyone) will be as loathsome as their ancestors, they will richly deserve hell on earth.

This collection of articles and reviews are about human behavior (as are all articles by anyone about anything), and so about the limitations of having a recent monkey ancestry (8 million years or much less depending on viewpoint) and manifest words and deeds within the framework of our innate psychology as presented in the table of intentionality. As famous evolutionist Richard Leakey says, it is critical to keep in mind not that we evolved from apes, but that in every important way, we are apes. If everyone was given a real understanding of this (i.e., of human ecology and psychology to actually give them some control over themselves), maybe civilization would have a chance. As things are however the leaders of society have no more grasp of things than their constituents and so collapse into anarchy and dictatorship appears inevitable.

Since philosophy proper is essentially the same as the descriptive psychology of higher order thought (behavior), and philosophical problems are the result of our innate psychology, or as Wittgenstein put it, due to the lack of perspicuity of language, they run throughout human discourse and behavior, so there is endless need for philosophical analysis, not only in the 'human sciences' of philosophy, sociology, anthropology, political science, psychology, history, literature, religion, etc., but in the 'hard sciences' of physics, mathematics, and biology. It is universal to mix the language game questions with the real scientific ones as to what the empirical facts are. Scientism is ever present and the master has laid it before us long ago, i.e., Wittgenstein (hereafter W) beginning with the Blue and Brown Books in the early 1930's.

Although I separate the book into sections on philosophy and psychology, religion, biology, the 'hard sciences' and politics/sociology/economics, all the articles, like all behavior, are intimately connected if one knows how to look at them. As I note, The Phenomenological Illusion (oblivion to our automated System 1) is universal and extends not merely throughout philosophy but throughout life. I am sure that Chomsky, Obama, Zuckerberg and the Pope would be incredulous if told that they suffer from the same problems as Hegel, Husserl and Heidegger, or that that they differ only in degree from drug and sex addicts in being motivated by stimulation of their frontal cortices by the delivery of dopamine (and over 100 other chemicals) via the ventral tegmentum and the nucleus accumbens, but it's clearly true. While the phenomenologists only wasted a lot of people's time, they are wasting the earth and their descendant's future.

I hope that these essays will help to separate the philosophical issues of language use from the scientific factual issues, and in some small way hinder the collapse of civilization, or at least make it clear why it is doomed.