Review of The Minds 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 D'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) and the logically necessary incompleteness of math (and all thought). 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 give in my more recent writings.

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

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 to date(2008) of D and H to understand behavior see my review of D'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) and the logically necessary 'incompleteness' of math (and all thought), which is now fused at the highest levels with physics (e.g., string theory). Godels incompleteness theorem was a central theme of his first book, and of his most recent(ISL) and I give what I hope is a comprehensive way to view these issues in my review of that book.

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. Nobody discusses the mental mechanisms involved. 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 as explanations (and omit), 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 commend Buss's "Handbook of 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. See several of the recent texts (i.e., 2004 onwards) with evolutionary psychology in the title or the web for further info.

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 I 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 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 philospher 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 its 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. 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 any way. We did not then and do not now (i.e., 25 years later) 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 COS) would be. But DD and DH did not get the point.

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 month old baby, or a robot with the real world intelligence of an ant. 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 (mind, as Wittgenstein made clear) works and so they just repeat the errors of 2500 years of philosophy.