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Leonard Mlodinow

Subliminal: How Your Unconscious Mind Rules Your Behavior

New York: Vintage Books, 2013, 260 pp. \$9.38 (paperback).

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The notion of an unconscious mind, in disrepute among research scientists for much of the twentieth century, now enjoys wide acceptance. This previous disrepute seemed due to its past association with Freudian psychoanalysis, if the frequent disclaimers by modern psychologists that their notion of the unconscious is not the Freudian one are anything to go by. Leonard Mlodinow's latest book is an introduction to this 'new unconscious', and is full of fascinating, ingenious, and often surprising experiments, described with admirable clarity, which show that our behavior, feelings, and attitudes are often influenced by factors of which we are unaware. We read about shoppers who choose German wines because German music is playing in the background, investors who invest in companies because they have easy-to-pronounce names (all unaware of these influences), a blindsight subject who navigates an obstacle course which he 'can't see', and much more. This new unconscious is portrayed as something generally adaptive, taking care of the cognitive donkey-work to free up our conscious minds for other tasks.

Methodological criticisms of studies into unconscious mentality continue to be made (Newell & Shanks 2014), so the notion is still not uncontested. But Mlodinow is unmistakably in the advocates' camp. He claims that proper scientific study of the unconscious mind is a recent phenomenon. This rigorous, scientific orientation he attributes to neuroscience in particular: '[s]ophisticated new technologies [fMRI] ... have made it possible, for the first time in human history, for there to be an actual science of the unconscious' (p. 5).

Mlodinow does an injustice to psychology here, since the most important demonstrations of unconscious mentality have taken place within that discipline. Easily the most important experimental paradigm used for demonstrating unconscious mentality has been the dissociation paradigm, a fact which moved Matthew Erdelyi to say that '[t]he "unconscious" ... always involves, and is defined by, a dissociation between two indicators (or sets of indicators)' (2004, p. 76). In experiments demonstrating unconscious perception for instance, the first of these is supposed to indicate consciousness of a stimulus, while the other indicates perceptual sensitivity to that stimulus. Unconscious perception is demonstrated when the former registers a negative result while the latter registers a positive result. Moreover, these indicators have almost always been

behavioural in nature, not neural (e.g., a blindsight subject adamantly *says* that he didn't see a stimulus, while his *performance* in a forced-choice test is sensitive to that stimulus).

It's true that recently scientists have started using neural indicators instead of (often controversial) behavioural ones in dissociation paradigm experiments. But as Elizabeth Irvine recently explained, these are just the neural correlates of the behavioural indicators traditionally taken to mark consciousness of or sensitivity to a stimulus, so this neuroscientific approach 'does not seem to have moved the field onwards. Whatever the neural evidence, most debates till rage at the behavioural level' (2013, p. 293). Historically, the tachistoscope has probably been of more importance for the scientific study of the unconscious than fMRI, and even the great majority of the experiments described in Mlodinow's book are from psychology and contain no neuroscientific data.

Mlodinow's book serves as an excellent, well-researched introduction into recent work on the unconscious mind, but in this review I'll be more concerned with the book's more striking and disconcerting (partly because of its implications for free-will and autonomy) suggestion that, as the title proclaims, we are not just influenced but are *ruled* by our unconscious minds. I'll suggest that it's unclear that this radical lesson can be taken from the studies which Mlodinow discusses. For one thing, Mlodinow sees the workings of the unconscious mind everywhere, with each chapter detailing its influence in specific domains: perception, memory, categorization, social interaction, reasoning etc. But once some relevant distinctions are acknowledged, unconscious mentality begins to look less pervasive than he suggests.

Firstly, Mlodinow makes no distinction between the *automatic* and the *unconscious*. Often, things we do automatically we also do unconsciously. For instance, I've often fidgeted with a pen while listening to a lecture, and was surprised afterwards to see that I'd put marks all over my hand. Also, Mlodinow discusses the subtle behavioral/demeanoral modifications that express our thoughts, feelings and expectations (e.g., during a card game), which are often both automatic and unconscious (chap. 5). But we can also be conscious of our automatic actions (e.g., ducking as a pigeon zooms by our head), and there can be intermediate cases. Mlodinow isn't sensitive to these differences. He speaks, for instance, of how we 'unconsciously' make proper use of gerunds, subjunctive verbs, and indefinite articles when speaking, as we focus on the content of what we're talking about rather than the words. Fluent speakers do these things automatically for sure, but unconsciously? Though we may not have our attention focused on which words we're using, we are not unconscious of using them the way a blindsight subject is unconscious of the stimulus being presented to his blind visual field, in the sense of being totally oblivious to them, and we will generally be able to correctly report that we appropriately used, say, the indefinite article a moment

ago if asked, unlike the blindsighter, who can't tell us what stimulus was just presented to his scotoma.

Even regarding actions which are both automatic and unconscious, these do not exemplify the unconscious mind proper. Here we must distinguish between the notion of our having thoughts, feelings, desires, perceptions, and other *mental phenomena* of which we are unconscious, and the much wider notion of *being unconscious of something*, including non-mental things like physical actions. Typically we have the former in mind when speaking of 'the unconscious mind' (e.g., Gardner 2003, pp. 107-108). Many of the examples that Mlodinow discusses, however, are physical actions, bodily changes, or internal bodily processes—not mental phenomena—of which we are unconscious. Such cases only exemplify an 'unconscious mind' in the latter, wider sense.

Mlodinow might argue that there must always be unconscious mental states generating our automatic actions however. He says that 'though we don't realize it, we are making many decisions each second. Should I spit out my mouthful of food because I detect a strange odor? How shall I adjust my muscles so that I remain standing and don't tip over?' (pp. 33-34). Indeed, decisions are commonly regarded as mental acts. But why not simply regard such automatic behaviors as more or less sophisticated mechanical reflexes? Or should we also say that alarm clocks 'decide' to ring when they reach the pre-set time? That said, unconscious mental states may sometimes influence our automatic actions.

Another phenomenon we should distinguish is being aware of an action, but being unaware of a certain fact about it. An example would be saying something offensive, while not realizing that it's offensive. Motivated reasoning, which Mlodinow discusses in the final chapter, is arguably in this category. When assessing an issue for truth, we use motivated reasoning when there is a certain conclusion which we *hope* is true, and then, like a lawyer tasked with convincing others of this conclusion, we 'seek evidence that supports it, while also attempting to discredit evidence that doesn't' (p. 200). This is a *biased* way of assessing an issue. Mlodinow says that 'motivated reasoning is unconscious' (p. 205), which means that people do it without being aware that they're being biased (p. 213). We should note, however, that this too is not an example of the unconscious mind properly so-called. It is being unaware of a certain fact about our actions: that they are biased, which needn't involve being *unaware of any of our mental states, actions, or events*. That said, Mlodinow's discussion of motivated reasoning was highly illuminating, and contains a well-chosen selection of relevant experiments.

Mlodinow shows convincingly that we often have little insight into the causes of our behavior. For example, many studies have shown that our behaviour is influenced by the weather. Customers tip more when it's sunny for instance, though they are 'probably unaware that the

weather influenced them' (p. 27). Here again, it's important to acknowledge the distinction between being unconscious of our own mental phenomena, and being unconscious of something more generally. Jones might be unaware that he tipped more because it's sunny. But what he is unaware of here is not any mental state of his that caused him to tip more. He is simply unaware of a certain causal 'mechanism': the sunny weather put him in a good mood, and when in a good mood he tends to be more generous, which is why he tipped more. This mechanism needn't involve the covert operation of any unconscious mental states, and so once again, this phenomenon (and the others like it which Mlodinow discusses) doesn't exemplify unconscious mentality proper.

Another distinction that Mlodinow seems not to make but which he should at least consider making is that between brain activity and mental activity. As Mlodinow discusses, there are all sorts of complicated processes that occur in the brain and nervous system, for example during visual perception, and 'you have little knowledge of or access to the processing' (p. 35). Such 'unconscious processes can *never* be directly revealed through ... self-reflection ..., because they transpire in areas of the brain not open to the conscious mind' (p. 16). People often write as if this is more surprising than our having little knowledge of or introspective access to the processes taking place within our livers or digestive systems. We have, ordinarily, no perceptual access to *any* of our brain processes, be they associated with unconscious *or conscious* mentality, or non-mental regulative functions. Who ever assumed otherwise?

But in what sense are these brain processes 'unconscious processes'? Undoubtedly they are, like our liver processes, processes of which we are unconscious (most of us at any rate: neuroscientists, who study these processes, are aware of them in a sense, and can sometimes see them occurring using fMRI). But from the fact that we're unconscious of a process, it doesn't follow that it's an unconscious mental process. That further thesis would need arguments, which Mlodinow doesn't provide.

Besides his suggestions as to the pervasiveness of the unconscious, Mlodinow also makes the logically distinct suggestion that it exercises a domineering effect over us, 'much more powerful than we have previously believed it to be' (p. 8). For instance, '[w]e believe that when we choose a laptop ... and even fall in love, we understand the principle factors that influence us. Very often nothing could be further from the truth. As a result, many of our most basic assumptions about ourselves, and society, are false' (pp. 25-26). Mlodinow is moved to say this about love by a study which found that people marry their namesakes with surprising frequency. Browns marry other Browns much more frequently than they marry Smiths, Joneses, etc., though they would never give this as their reason for liking their partner. From this he concludes that we have a 'tendency to be unconsciously biased in favor of traits similar to our own, even such seemingly meaningless traits

as our names' (p. 19). The basic assumption about ourselves that is false here is, presumably, that we fall in love principally on the basis of looks and personality.

Though there may be other ways of interpreting these findings, let's grant that people can, without realizing it, find someone attractive because he/she has the same surname. But could this be the *principle* factor on which their love is based? If so, then we could expect that if Sarah Brown met James, and didn't fancy him (he lacks the traits she avers to look for in a partner), she might find herself warming to him after discovering that he too is a Brown. This factor should be sufficient in itself to sustain romantic feelings (or it wouldn't be a 'principle factor'). But that is implausible to say the least, and the mentioned findings hardly prove it. What they might lead us to expect, however, is that if James and Charlie were similarly good-looking, funny etc., Sarah might rate James more highly if he, but not Charlie, was also a Brown. It would take much stronger evidence than Mlodinow presents to show that in matters of the heart, we are ruled by such unacknowledged influences.

In light of the above distinctions, this book might be better conceived as being about failures of self-knowledge in a wide sense, rather than the unconscious mind in particular, and as an introduction to that it succeeds very well in giving a flavor of recent research in a variety of cognitive domains. However, careful readers might remain unconvinced that it vindicates the book's subtitle.

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References

- Erdelyi, M.E. (2004) Subliminal perception and its cognates: theory, indeterminacy, and time, *Consciousness and Cognition*, **13** (1), pp. 73-91.
- Gardner, S. (2003) The unconscious mind, in T. Baldwin (Ed.), *The Cambridge History of Philosophy 1870-1945*, pp. 107-116, Cambridge: Cambridge University Press.
- Irvine, E. (2013) Measures of consciousness, *Philosophy Compass*, **8** (3), pp. 285-297.
- Newell, B.R. & Shanks, D.R. (2014) Unconscious influences on decision-making: a critical review, *Behavioral and Brain Sciences*, **37**, pp. 1-19.