

Untestable claims and the evolution of consciousness

"Review of "The Ancient Origins of Consciousness: How the Brain Created Experience" by Todd E. Feinberg and Jon M. Mallatt. Pub. 2016, MIT Press. Hbk: \$35.00/£27.95, ISBN: 9780262034333; e-book: \$25.00, ISBN: 9780262333252.

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No one has solved the ‘hard problem’ of consciousness until now, claim Feinberg and Mallatt; no one has bridged the ‘explanatory gap’ between mind and brain before. But they claim to have done it by finding ‘the basic requirements for consciousness’, tracing when and where these first appeared and so discovering that consciousness emerged between 560 and 520 million years ago during the Cambrian explosion. If they had really succeeded this would indeed mark the ‘Holy Grail of consciousness studies’. They have not.

The great strength of this book lies in its meticulous analysis of the evolution of sensory systems from the earliest single-celled creatures to the complexities of modern mammalian brains. Feinberg and Mallatt trace the evolution of sections of the vertebrate brain as they change in structure and function through different phyla, including the pallium, optic tectum, brain stem and cortex. They track the evolution of eyes from single light-sensitive cells to image-forming eyes with lenses and rich multi-sensory integration. They analyse how limbic systems have evolved along with emotional functions in different creatures. All this is illustrated with a wonderful array of diagrams and tables, with delightful images of animals ranging from amphioxus, sea squirts and lampreys to dinosaurs, frogs and humans.

But this is meant to be a book about the evolution of consciousness and here, to my mind, it completely fails. There is no question that the authors are tackling the same problems as others in the field of consciousness studies. They describe consciousness in the familiar terms of subjective experience, phenomenality, or ‘what it is like to be’ ([1]; they clearly explain the

hard problem and explanatory gap as the difficulty of understanding how subjective experience is related to objective processes in brains and bodies [2], [3]. Yet they seem not to grasp just how difficult these problems are.

Roughly speaking, researchers on consciousness fall into two categories [4]. Some believe that consciousness is something in its own right – an added extra, distinct from the processes of sensation, perception, learning and so on – the processes whose origins this book traces. In this view it makes sense to ask about the function of ‘consciousness itself’, to ask why it was adaptive and why we evolved to have this too rather than being ‘zombies’ with no inner experience [5]. Yet this means the explanatory gap yawns wide [3]. How can my private experience of seeing blue or hearing a blackbird’s song cause anything to happen? If it can this entails what the authors refer to as ‘real mental causation’ which they describe as ‘how immaterial consciousness can cause changes in the material world’. But no one has yet managed to explain how this type of downward causation could work, despite such brave attempts as quantum theories of consciousness and various types of dualism. The hard problem really is hard.

The main alternative is to deny the existence of ‘consciousness itself’ as anything separate from perception, learning and so on. One version is eliminative materialism, the claim that conscious experiences simply *are* the firing of neurons and the analysis of sensory information, even if they don’t seem to be [6]. Another is to say that consciousness as we normally think of it is an illusion; that we are deluded into imagining the hard problem and the explanatory gap when really they do not exist. This ‘illusionist’ approach [7] is tough because it means giving up the idea that ‘consciousness itself’ exists and has powers, effects or functions of its own. It means that if we successfully explain the evolution of nervous systems there is nothing more to explain other than why we so readily fall for the illusion [8]. There is no hard problem.

In the end, Feinberg and Mallatt take neither path. Indeed they seem to wriggle between them without realising the problems involved. Superficially their theory of ‘neurobiological naturalism’ might appear to fit the second approach, because they claim that relying on the confluence of the neurobiological, neuroevolutionary, and neurophilosophical domains provides an ‘unbroken continuity’ between subjective experience and explicable life processes. But look a little closer and it’s obvious that they believe in a break – a specific time which marks the origin of the hard problem, ‘the transition from nonconscious to conscious’, the arrival of consciousness.

They may claim that the hard problem is solved but they clearly treat consciousness as an adaptive function in its own right, separate from all the natural processes on which it depends. They write of brains creating, possessing, producing and generating consciousness. They refer to the site or central stage or circuits of consciousness, and even the genes of consciousness. They clearly state that it is an evolutionary adaptation capable of directing behaviour.

Along the way they make untestable claims: that reflexes are not conscious, that sensory hierarchies require four or more levels to be conscious, or that the ‘defining features of consciousness’ include non-nested and nested hierarchical functions, isomorphic representations and mental images. It is not that these suggestions are wrong but that there is no way of telling whether they are. And the argument is circular – specify in advance what you think the defining features are and then conclude that any creature with those features must be conscious.

Although this book presents a fine survey of the evolution of brains, it has not revealed the ‘ancient origins of consciousness’.

References

- [1] Nagel, T. 1974 What is it like to be a bat? *Philosophical Review* **83**, 435–450
- [2] Chalmers, D. 1995 Facing up to the problem of consciousness. *Journal of Consciousness Studies*, **2:3**, 200–219
- [3] Levine, J. 1983 Materialism and qualia: The explanatory gap. *Pacific Philosophical Quarterly*, **64**, 354–361
- [4] Blackmore, S. 2011 *Consciousness: An Introduction*, Oxford University Press
- [5] Chalmers, D. 1996 *The Conscious Mind*, Oxford, University Press
- [6] Churchland, P.S. 1986 *Neurophilosophy: Toward a Unified Science of the Mind–Brain*. Cambridge, MA, MIT Press
- [7] Frankish, K. 2016 Illusionism as a theory of consciousness, *Journal of Consciousness Studies*, **23**, 11-39
- [8] Blackmore, S. 2016 Delusions of consciousness. *Journal of Consciousness Studies*, **23**, 52-64