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Self Comes to Mind: Constructing the Conscious Brain by Antonio Damasio - review

Steven Rose examines a neurologist's attempt to explain why we have conscious selves



Steven Rose
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Consciousness has become a hot topic for brain scientists. Once, we were content to leave the interminable mind/brain problem to philosophers and theologians. Speculation remained a CLM – a career-limiting move – for ambitious young researchers. No longer. Armed with novel tools, from genetic manipulation to brain imaging, flush with funding, and convinced that neuroscience has the key to the human condition, the hunt is on. Experiments, conferences and books proliferate, and philosophers of mind can no longer be taken seriously until they have done an internship in a neurophysiology lab.

Self Comes to Mind: Constructing the Conscious Brain: The Evolution of Consciousness

by Antonio Damasio

Antonio Damasio
Self Comes to Mind
Constructing the
Conscious Brain



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Neuroscientists, especially those of us trained in the Anglo-American tradition, tend to be as mechanically materialist as was "Darwin's bulldog", Thomas Huxley, in the 19th century, when he remarked that mind is to brain as the whistle is to the steam train – a mere epiphenomenon. Thoughts, feelings, intentions, reasons – all are causally generated by brain processes, and it is these latter that do the real business. Hence for Francis Crick, "you are nothing but a pack of neurons", free will is located in the cingulate gyrus, and consciousness in the claustrum – two small regions of the human brain's massive cerebral cortex. Self-styled "neurophilosophers" such as Patricia Churchland follow in their footsteps, proposing that mental language is mere "folk psychology", destined to be reduced and replaced by a biologically precise language of neural connections and brain activity.

Consciousness is a term with multiple meanings. David Lodge has argued that the richness of individual conscious experience, that essential subjectivity, is better

explored in novels and poetry than by neuroscientists. Most consciousness researchers ignore this rich heritage; for them the word signifies simply the obverse of being unconscious or asleep – that is to be awake, aware, attending and alert to one's immediate surroundings. Consciousness studies typically involve experimental subjects fitted with brain readout devices such as an electroencephalogram. They are asked to make a decision – for instance when to press a button – and to state the time at which they became aware that they had made the decision. It turns out that the EEG indicates that the brain has made the decision some few thousandths of a second before subjects "know" they have decided. So why bother with consciousness at all? Couldn't that fantasy creature, a mindless zombie, do the job just as well?

For biologists though, consciousness, if not an accidental epiphenomenon, must be an evolved property with a function of some benefit to its possessor. As of course it is: being conscious gives us humans the capacity to learn from the past, to anticipate and plan for the future, to establish and maintain social relations, to imagine and create societies, technologies, art and literature. This has – so far – proved a successful evolutionary strategy. Yet human consciousness appears to be not merely quantitatively but qualitatively distinct from that of even our closest evolutionary neighbours, chimps and bonobos. And as one needs a brain to be conscious in any of the word's multiple meanings, there must be something about the human brain that differentiates us from the bonobos and enables consciousness.

It is these issues that Antonio Damasio, a neurologist now based in California, has wrestled with in a series of books over the past two decades. He has several advantages over his American neuroscientific peers. His continental European training sensitises him to the reductionist traps that ensnare so many of his colleagues. The book is dedicated to his neurologist wife Hanna, whose work with brain- and consciousness-damaged patients, brings her closer to real life than the remote context and artificial experimental set-ups of the neuropsychology lab. Inclined though he is to define consciousness narrowly ("a state of mind in which there is knowledge of one's own existence and of the existence of surroundings") and to put to one side its content – what we actually think about – his is the only one of the many consciousness books weighing down my shelves that feels it necessary to mention Freud's, as opposed to an anaesthetist's, use of the term unconscious.

Anyone who has read any of Damasio's previous three books will find *Self Comes to Mind* retreading some familiar territory, though here set in a firmly evolutionary context. In Damasio's terminology, even single-celled organisms such as bacteria or amoebae have a minimal sense of self, working to preserve their internal integrity against foreign incursion. They also show primitive emotions, the earliest forerunners to our own experiences of pain and pleasure, moving away from noxious stimuli and towards food sources. In accord with standard physiology Damasio calls the processes by which an organism stabilises its body state homeostatic. (I prefer the term homodynamic; stasis, after all, is death). In multicellular organisms, which appear later in evolutionary history, the cells that recognise the presence of such stimuli are separated from those that must co-ordinate the organism's responses to them. Before nervous systems evolved, the sense-receptor cells signalled to those co-ordinating the response through chemicals (hormones) that diffuse through the body. Later in evolution, dedicated signalling lines (nerves) appear, connecting the receptor cells with a central group of nerve cells – neurons – that are the forerunners to our own brains.

Brains are by no means the only game in town; bacteria and plants of course flourish quite well without, and will probably outlive humans. But our ancestors took a different route, building bigger and more complex brains. Within such brains neurons communicate with each other by myriad connections. These fluctuating patterns can

form representations of both the external world and the body state of the organism that owns them. Such brains enable their possessors to learn and remember, to recognise the present in the context of the immediate past and the imminent future. To Damasio this means that they are, or possess, selves. In animals with big brains, emotions – mere bodily responses – become translated into feelings, and with feelings, a mind – "a subtle flowing combination of actual images and recalled images in ever-changing proportions" – emerges from the brain. Many large-brained creatures thus have minds, however alien they may be to our own. But consciousness emerges only when – to quote the book's title – self comes to mind, so that in key brain regions, the representational maps of sensory experience intersect with the encoded experiences of past that self provides. This, enabled by the evolution of language, makes possible autobiographical memory – the narrative of our lives that we humans all possess and which is the basis for consciousness.

This, briefly summarised, is the latest version of Damasio's theory. The story is told in prose of intermittently easygoing lucidity, but his primary training as a neurologist compels him into passages of detailed neuro-anatomy, locating brain regions functionally responsible for enabling particular aspects of consciousness. But which bits of the brain might be involved, though of passionate concern to neuroscientists, isn't the crucial issue – which is whether Damasio has thereby solved what has been called the "hard problem" of consciousness studies by relating third-person "objective" accounts to first-person subjectivity. I fear that however convincing his evolutionary story may be, simply to state that these brain processes translate into mental experience leaves us, despite some very elegant hand-waving, exactly where we were before. And herein lies the paradox of the book's subtitle. Brains are not conscious; people are. Our brains enable our consciousness, just as our legs enable our walking, as the anthropologist Tim Ingold has pointed out. But to attribute the property of a whole to that of a part is to commit what philosophers refer to as the mereological fallacy (one that I confess I have not been entirely innocent of in my own writings).

In everyday thought and speech we have reasons, intentions, feelings. In brainspeak we have synapses, firing patterns, neurotransmitters. For the mechanical materialist, the latter causes the former – and in his routine use of causal language Damasio reveals himself as just that. This is why the weakest part of the book is the concluding chapters, where he extends his central principle of homeostasis to embrace human history, society and culture. But it is possible to be a non-reductionist materialist. The language of mind and consciousness relates to the language of brains and synapses as English does to Italian; one may translate into the other, though always with some loss of cultural resonance. But we do not have to assign primacy to either. Long may pluralism reign, and we conscious beings continue to employ our minds and brains to enhance our understanding of both.

Steven Rose's *The 21st-Century Brain* is published by Vintage.