

Beast machines

Review of *Being You: A New Science of Consciousness* by Anil Seth. 368pp. Faber. £20.

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How does the brain produce consciousness—the world of experience and self-awareness that defines what it is to be you? Many philosophers (following David Chalmers) will tell you this is a “hard problem” which cannot be solved by science. In *Being You*, the neuroscientist Anil Seth takes a more pragmatic approach. Instead of puzzling over how consciousness arises, he focuses on what he calls the “real problem”—the challenge of using the tools of brain science to explain, predict and control the properties of consciousness. He argues that this approach is producing a “Copernican revolution” in how we think about experience.

Seth's central theme is that consciousness is not a transparent window on the world, but a context-dependent interpretation of it, composed of the brain's “best guesses” at the causes of the sensory signals it receives. It is a creative, top-down process, like a hallucination. Our experiences of colour, sound, smell, three-dimensional objects, change, time and even our sense of reality itself—these are all constructions of our brains, and they are influenced by our expectations and open to experimental manipulation. The hallucination is a controlled one, however, and the brain continually tests its guesses against new sensory signals and revises them accordingly. There is a real world around us, and the brain's constructions are shaped to track important features of it. Redness, for example, is not a real property of tomatoes, but red experience tracks the way tomatoes reflect light. Seth explains all this in an engaging and accessible manner, introducing important theoretical frameworks, reporting cutting-edge experimental work and sensitively recounting real-life case studies.

Seth then turns to the self. Our sense of self, he argues, has many components but is ultimately based on experience of our own bodies. We perceive our own bodily condition via internal sense organs, and this inner perception is a controlled hallucination, too. In this case, however, it is as much a guide as a guess. The brain maintains a model of what our bodily condition should be, and it responds to discrepancies with new signals not only by modifying the model but also by initiating physiological changes to bring the body in line with the model, creating the sense that we have a stable, unchanging self. The upshot is that consciousness is deeply rooted in our nature as *biological* organisms—“beast machines” in Seth's vivid phrase—and it is less about intelligence than about survival and organismic self-regulation. The final chapters of the book explore the implications of this view for consciousness in other animals and artificial systems.

Being You depicts the brain as a creative artist, restlessly conjuring a world of meaning and opportunity from the raw data it receives. It is a compelling picture, and a salutary corrective for those who think of consciousness as a disembodied process, whether psychic or computational. Of course, some philosophers will object that Seth hasn't explained consciousness at all. They will say that his story about the brain's creative interpretation of sensory signals leaves out the intrinsic feel of experience. The experience of redness, they will say, is more than a bunch of best guesses about the reflectance properties of objects; it involves acquaintance with a real mental redness. Seth doesn't directly address this worry (which is the basis of the hard problem) but suggests that it will gradually evaporate as we continue to work on the real problem. We will lose our sense that neuroscience leaves out something about consciousness, just as we have lost our sense that biology leaves out something about life. I think this is wise. Framing the problem of consciousness in a way that makes scientific progress impossible is not a good strategy. Indeed, Seth's approach may explain why we think there is a hard problem in the first place. It may be that the brain has its own internal sensors and extends its best guessing to itself, creating constructs of intrinsic feel which help it to track and regulate its own activity. If so, then mental redness may be no more a property of brain states than worldly redness is of tomatoes.