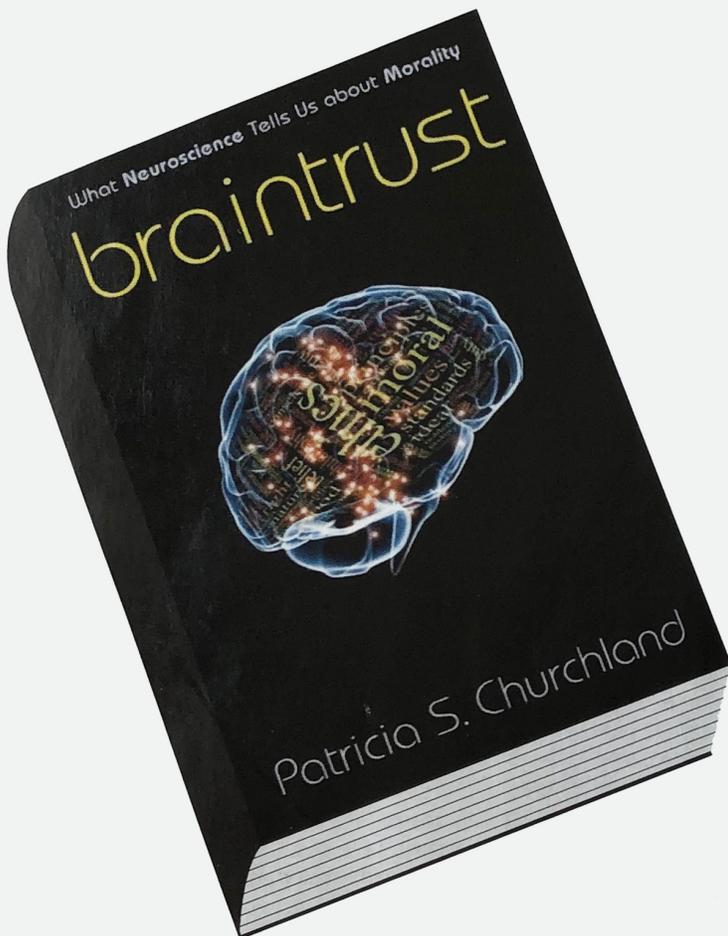


If it feels good, perhaps it is

A scientific explanation for human moral values is far from straightforward, reveals Margaret Boden



Braintrust: What Neuroscience Tells Us About Morality
By Patricia S. Churchland
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There is a host of puzzling questions about where moral values come from - most of which have been debated for more than 2,000 years. Is morality drawn from a lawgiver God, for instance, so that if God is dead then anything is permitted? Or is it grounded in inborn behavioural dispositions, or virtues, naturally possessed by all human beings?

Perhaps our moral values spring from intuitions about "the good" that give us knowledge about ethical reality, much as

vision offers knowledge about physical reality? Or perhaps knowledge has nothing to do with it, since moral values are merely objectively unanchored habits picked up from a bewildering variety of cultures, no one of which is in principle preferable to any other? If that's so, however, is it that the diversity of ethical systems is limited, since it simply isn't the case that *anything* goes?

All those questions feature in Patricia Churchland's intriguing book. But the puzzle that concerns her above all is whether morality can be explained or justified by science. If it can, then several disciplines are potentially relevant: evolutionary psychology, social and cognitive psychology, cultural anthropology and even

neuroscience. Churchland's main aim, as the book's subtitle suggests, is to persuade us that recent discoveries in brain science can teach us some important things about morality. But she also provides insights drawn from those other disciplines, showing how morally relevant behaviour has evolved and how it has diversified with the appearance of complex human brains and diverse human cultures.

You may be thinking that this is arrant scientism: crudely reductionist - and philosophically ignorant, too. Didn't David Hume teach us in the 18th century (and George Moore remind us in the early 20th) that you can't derive an "ought" from an "is" - in other words, that no scientific facts can justify any moral value?

Let's agree, for instance, that comparative and evolutionary psychology give us good reason to think that *Homo sapiens* is naturally cooperative, and that cooperation tends to help the species to survive. And let's suppose (as Churchland suggests) that cooperation, and learning how to please other human beings, are types of behaviour grounded in identifiable reward systems in the brain, involving specific neurochemicals (such as oxytocin) that have evolved in vertebrate brains over millions of years.

Let's grant also that the same ancient reward systems underlie pleasurable relationships of social attachment within the immediate family and in wider cultural groups, making it possible - and even likely - that social norms will arise that encourage certain types of behaviour rather than others.

Let's also allow that some parts of the brain have evolved to represent the intentions and preferences of other people, ideas that figure prominently in cooperative behaviour and other moral decisions.

But so what? What have such (mere) facts to do with ethics? Biology and neuroscience may show how cooperation evolved, but they can never prove that it is morally valuable. In short, surely Hume was right? Indeed, Churchland agrees with him. As she points out in her opening chapter, for Hume, "derive" meant "deduce" - and he was right in saying that facts about what ought to be the case cannot be strictly deduced from facts

about what is the case. In that sense, it is true that science can't give us morality.

So why bother with the other 250 pages of her book? Hasn't she cut the ground from under her own feet? No doubt she can tell us many intriguing things about how brains work, and about how animals and human beings behave, but it seems, given Hume's insight, that she can have nothing to say about the nature and origin of morality as such. But all is not as it seems. This is one of the many points in

“What have such facts to do with ethics? Biology and neuroscience may show how cooperation evolved, but they can never prove that it is morally valuable”

Churchland's book where scientific discoveries are brought into her philosophical argument. For Hume, as for most other Anglo-American philosophers, deductive thinking is the only truly respectable type of thought. This itself is a value statement, not a statement of fact. Churchland counters it not by attempting a direct disproof, but by pointing out that rigorously deductive thinking is very rare - and virtually non-existent in the context of our moral life.

The key thought process in solving moral (and most other) problems is not deduction, but constraint satisfaction. A host of more or less relevant, and even partially conflicting, considerations are normally brought to bear in making a decision. Often, analogies are drawn between the current dilemma and past problems (think of how we use the New Testament parables). The final decision respects as many of those finely balanced considerations as possible, especially the weightier, more relevant, ones. But this is typically done at the cost of discounting, or even ignoring, some of them. Deductive logic, this is not.

Churchland cites psychological research on the messy, non-logical nature of everyday concepts ("prototypes"). If concepts like "bird" and (Wittgenstein's favourite) "game" cannot be neatly defined as lists of necessary

and sufficient conditions ideas such as "good" or "wrong" certainly cannot. (So much for any attempt to state morality in terms of exceptionless rules.) She also cites computer models of constraint satisfaction, associative learning and analogical thinking.

The first two of these are implemented in connectionist networks broadly modelled on the structure of the brain.

Constraint satisfaction is a form of information-processing that occurs naturally within such systems. Logical deduction is a more specialized, limited process.

Many philosophers will remain unconvinced. Yes, they will say, we do usually think in regrettably messy ways. And science can doubtless tell us a great deal about how that thinking works and how it evolved. They will probably allow that Churchland provides a wealth of scientific evidence, involving concepts drawn from psychology and anthropology as well as from "reductionist" neuroscience. They may welcome her warnings about the difficulties of interpreting results from functional magnetic resonance imaging brain scanning, as well as her many other cautions about the current lack of detailed scientific knowledge.

But the proper task of moral philosophy, according to these thinkers, is to achieve non-messy, ie, rigorously deductive, accounts of ethics. The fact that more than 2000 years of debate haven't yet produced a convincing theory of morality means that we haven't tried hard enough - not that this is, in principle, a wild goose chase.

At this point, Churchland can only appeal to realism. She insists that morality is a feature of flesh-and-blood humanity, not of some abstract or supernatural world. Any satisfactory philosophical account of ethics must respect the actual nature of our thought and behaviour, not lose itself in unrealistic fairy tales. Human life being what it is (and what cognitive science increasingly shows us that it is), it's no accident that such fairy tales fail to capture it precisely.

As for the justification of morality, science can show why (and how) humans naturally find certain sorts of behaviour more rewarding than others. It can show, as Churchland puts it, how "caring" can evolve into "caring for", and persuade us that "attachment ... is the neural platform for morality". It can also allow that cultural learning can overlay these biological basics with more diverse and sometimes mutually conflicting social norms.

That interacting with our conspecifics, and pleasing them, is deeply rewarding to human animals is a scientifically demonstrable and explicable fact. Logically deductive proof that we *ought* to aim for such reward isn't available from science - or from anywhere else, either.

Margaret A. Boden is research professor of cognitive science, University of Sussex. She is author, most recently, of *Mind as Machine: A History of Cognitive Science* (2006) and *Creativity and Art: Three Roads to Surprise* (2010).

THE AUTHOR



Patricia Churchland was born in the Okanagan Valley of British Columbia, Canada. After completing a BPhil at the University of Oxford in 1969, she was appointed a junior professor at the University of Manitoba. There she began to join medical

students in classes on the brain, which quickly became an "overwhelming intellectual passion... Soon I was in the lab dissecting brains and going on neurology rounds to see patients with brain damage."

Churchland and her husband Paul spent 14 years at Manitoba until being "discovered" by the University of California, San Diego, where they have been for 27 years.

While working at the Salk Institute for Biological Studies on

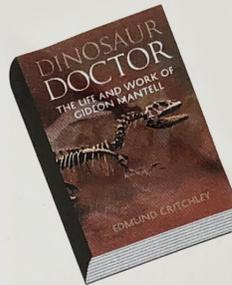
a co-authored book (*The Computational Brain*, 1992), she won a MacArthur Fellowship. The recognition, she says, "gave me a modicum of legitimacy among philosophers, most of whom had found the idea of neurophilosophy patently ridiculous." The award also financed a rafting trip with some undergraduates on the Yukon's Firth River, where their Inuit guide taught them how to sneak up on musk oxen.

Chloe Darracott Cankovic

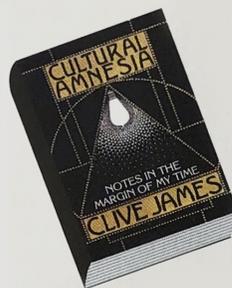
WHAT ARE YOU READING?

A weekly look over the shoulders of our scholar-reviewers

Martin Cohen, editor of *The Philosopher*, has been reading Edmund Critchley's *Dinosaur Doctor: The Life and Work of Gideon Mantell* (Amberley, 2010). "This is a scholarly look at the palaeontologist who discovered the *Iguanodon*. By 'scholarly' I mean that it is full of every fact the author can think to include, from the kind of leather that Mantell's dad manufactured to how early geologists calculated the weight of the *Megalosaurus*. Put another way, it's pretty boring. Fortunately, it's also about Lewes, my home town. I know the villages where Mantell found fossils - and the Pitdown Man pub, named after the hoax fossil that was a backwards tribute to Mantell."



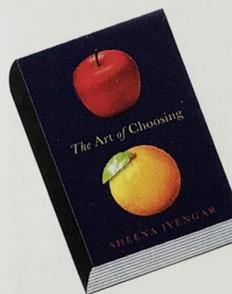
David Gewanter, professor of English at Georgetown University, is reading Clive James' *Cultural Amnesia* (Picador, 2008). "At another royal wedding, James depicted Barbara Cartland's eyes as 'the corpses of two small crows that had crashed into a chalk cliff'. No American writer is so mean, musical or memorable; a thermometer set at boil. Here, he arranges his victory pelts alphabetically. Kafka to Keats; Einstein to Ellington. Or Hazlitt, Hegel, Heine, Hitler - which, combined, might form a new James: slashing journalist, synthesiser, warbling poet, leather boot."



Jelena Obradovic-Wochnik, lecturer in politics and international relations, Aston University, is reading Ed Vulliamy's *Amexica: War Along the Borderline* (Bodley Head, 2010). "Vulliamy investigates the drug trade, violence and disappearances along the Mexico-US border. He traces the escalation of drug-related violence into a major security problem, while illustrating its effects on borderland communities. Readers of Roberto Bolaño's novel 2666 will see parallels with real-life Amexica."



Isabelle Szmigin, professor of marketing, Birmingham Business School, is reading Sheena Iyengar's *The Art of Choosing* (Little, Brown, 2010). "The study of consumer behaviour is all about choices: good, bad and unexpected. Iyengar, psychologist, marries personal experiences with experiments in the arena of choice. Much will be known to those on top of trends in behavioural economics, but Iyengar, who is blind, offers an engagingly personal touch. Her account of choosing between 'Ballet Slippers' and 'Adore-a-Ball' (colours of nail polish) highlights problems faced by the visually impaired while questioning whether we can always trust our senses."



Jon Turney, senior visiting Fellow in the department of science and technology studies, University College London, is reading Theodor Rosebury's *Life on Man* (Viking, 1969). "An early look at what we now call the human microbiome. Rosebury was a critic of our modern obsession with hygiene, arguing that the microbes we carry are mostly best left alone. The science comes with long excursions into the anthropology of excrement, and the history of obscenity, in a liberating 1960s fashion."

