COGNITIVE SCIENCE

# Dennett rides again

**Dan Jones** relishes the philosopher's latest exploration of minds and memes.

In Joel and Ethan Coen's 2009 film *A Serious Man*, physics professor Larry Gopnik is in the middle of an existential crisis. In a dream, he gives a lecture on Heisenberg's uncertainty principle; Sy Ableman, the older man with whom Gopnik's wife is having an affair, stays on after the students disperse. In a condescending drawl, he addresses Gopnik and his equation-covered chalkboard: "I'll concede that it's subtle, clever — but at the end of the day, is it convincing?"

Philosopher and cognitive scientist Daniel Dennett has been hearing variants of this riposte for decades. If history is a guide, his latest book, *From Bacteria to Bach and Back*, will elicit similar responses. It is a supremely enjoyable, intoxicating work, tying together 50 years of thinking about where minds come from and how they work. Dennett's path from the origins of life to symphonies is long and winding, but you couldn't hope for a better guide. Walk with him and you'll learn a lot.

The book's backbone is Charles Darwin's theory of natural selection. That replaced the idea of top-down intelligent design with a mindless, mechanical, bottom-up process that guides organisms along evolutionary trajectories into ever more complex regions of design space. Dennett also draws heavily on the idea of 'competence without comprehension', best illustrated by mathematician Alan Turing's proof that a mechanical device could do anything computational. Natural selection has created, through genetic evolution, a world rich in competence without comprehension — the bacteria, trees and termites that make up so much of Earth's biomass.

Yet, as Dennett and others argue, genetic evolution is not enough to explain the skills, power and versatility of the human mind. Over the past 10,000 years, human behaviour and our ability to manipulate the planet have changed too quickly for biological evolution to have been the driving force. In Dennett's view, our brains turned into fully fledged modern minds thanks to cultural memes: 'ways of behaving' — pronouncing a word this way, dancing like so — that can be copied, remembered and passed on.

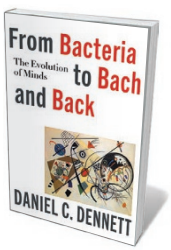
Some memes are better than others at getting passed on. This drives natural selection, fashioning memetic design without a designer. The first memes, Dennett argues, were words, "the lifeblood of cultural evolution", which act as virtual DNA for the richly cumulative cultural evolution that marks out our species. At first, he writes, words evolved to better fit the brains they had to colonize. Only later did brains start evolving genetically to better accommodate words, beginning a co-evolutionary process that turned us into voluble creatures.

Cognitive scientist Daniel Dennett in 2013.

BRYCE VICKMARK/NYT/EYEVINE

More generally, Dennett sees memetic evolution as akin to how software has co-evolved with hardware. Memes are like apps that "add a talent, a bit of know-how", slowly building up the repertoire of human competences and ever-greater degrees of comprehension. This, he avers, kicked off an incremental process that led to self-monitoring, reflection and the emergence of "new things to think about: words and other memes".

Later, inventions from writing to clocks gave us "memorable things to do things with". Step by small step, he argues, we moved away from bottom-up cultural evolution towards consciously directed, top-down explorations, giving birth to genuinely intelligent design. This has enabled us to wipe out smallpox, put people on the Moon — and ask questions about our own minds.




**From Bacteria to Bach and Back: The Evolution of Minds**
DANIEL C. DENNETT
*W. W. Norton: 2017.*

Perhaps none are bigger than the problem of consciousness. Dennett reprises his long-held counter-intuitive idea that consciousness is a 'user illusion' similar to the interface of an app, through which people interact with the program without understanding how it works. Memetic apps in our brains, Dennett argues, create a 'user interface' that "renders the memes 'visible' to the 'self'", authoring "both words and deeds".

Critics often quip that Dennett doesn't explain consciousness so much as explain it away, or duck the challenge entirely, and this chapter is unlikely to bring them around. When it comes to plugging the hole of subjective experience, sceptics are likely to see his solution as barely touching the sides. Dennett might well reply that a lack of imagination prevents them from seeing how his theory supports a version of consciousness devoid of over-inflation. For the philosophical background to these hard-to-swallow ideas, see Dennett's *Consciousness Explained* (Little, Brown, 1991).

Although *From Bacteria to Bach and Back* covers territory that Dennett has explored before, it is no mere rehash. Over the past couple of decades, many psychologists, linguists and philosophers have developed ideas that extend and deepen Dennett's contributions, and he draws on these in consolidating and refining his arguments.

Dennett has earned his reputation as one of today's most readable, intellectually nimble and scientifically literate philosophers, as this subtle, clever book shows. But at the end of the day, is it convincing? It's not an open-and-shut case, as he acknowledges. Many may find the earlier chapters more persuasive than the later ones, in which memetics shoulders so much weight and human consciousness looms large. Even scholars who embrace Dennett's account of how Darwinian processes fashion cultural design may stop short of hitching their wagon to his claims. But a virtue of his broad perspective is that it can tolerate disagreements over fine details while still hewing to the spirit of his vision.

Dennett's is not the only game in town, as he well knows, but it is immensely instructive and pleasurable to see this game played with such skill, verve and wit. ■

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