

Book Review

From Bacteria to Bach and Back The Evolution of Minds

by **Daniel C. Dennett**

Reviewed by Michael Schulman

The title of Daniel C. Dennett's latest book suggests that minds reached their apogee in the head of the great 18th-century composer and have since regressed to microbial automatism. Not so! Dennett admits to a fondness for alliteration and, in fact, devotes little space to bacteria or Bach, and in the final section of the book, "The Age of Post-Intelligent Design," he looks forward, rather than "back," to coming advances in nanotechnology, protein engineering and artificial intelligence.

Dennett, Professor of Philosophy at Tufts University in Massachusetts, has won a following among Humanist readers (including me) with his books *Darwin's Dangerous Idea: Evolution and the Meanings of Life* (1995) and *Breaking the Spell: Religion as a Natural Phenomenon* (2006). But the focus of his philosophizing, for over 50 years, has been the nature and natural development of consciousness, the subject of books from *Content and Consciousness* (1969) to *Consciousness Explained* (1991) and scores of journal articles.

In *Consciousness Explained*, the longest and central section was titled "The Evolution of Consciousness" and in the Introduction to this

new book, with its similar subtitle, Dennett says his "ideas have been repaired, strengthened and redesigned... I am trying once again and going for the whole story this time."

Dennett begins by dismissing anew as baseless two favourite targets – Cartesian dualists who claim consciousness in non-material (Dennett is an ardent materialist) and Creationists' "Intelligent Design" (Dennett sees design in nature, but shaped by evolutionary adaptation). He proposes that nature-designed "competence" (survival mechanisms) has led, gradually, to "comprehension" in developed minds, the opposite of human-designed problem-solving, in which comprehension precedes competence. He asserts that "biology is reverse engineering, the study of "what is – or was – this feature *good for* [his italics]."

"Comprehension comes in degrees," he writes, and describes four "degrees" of organisms that he calls "Darwinian" (for Charles):

Dennett admits to a fondness for alliteration and, in fact, devotes little space to bacteria or Bach [...]

From Bacteria The Evolution of Minds to Bach and Back



DANIEL C. DENNETT

**FROM BACTERIA TO BACH AND BACK:
THE EVOLUTION OF MINDS**

Daniel C. Dennett

W.W. Norton & Company

New York City, New York, 2017

496 pages, \$28.95 (hardcover)

ISBN-13: 978-0-393242072

“memes” – culturally transmitted elements including words (“pronounceable memes”) that also evolved by natural selection. He calls language “the *launching pad* of human cognition and thinking.”

In the major section “The Origins of Language” he speculates about the acquisition of language in our species and in individuals, pointing out that infant language-learning is an example of competence leading to comprehension, in contrast to adult second-language learning, in which comprehension precedes competence. Similarly, he suggests that our “Popperian” ancestors could have been able to use words competently, “without yet *realizing* they were using words... In a minimal sense they would *notice* words - they would be perceptually sensitive to them and respond differentially...but they wouldn’t have to *notice* their noticing.”

After more than 300 pages of preliminaries, including many digressions and thought-experiments not clearly germane to his main argument, Dennett comes to the section titled “Consciousness as an Evolved User-Illusion,” and the conclusion that humans became con-

hard-wired, incapable of novel variations of behaviour); “Skinnerian” (for Behaviourist B.F.: capable of behaviours modified by reinforcement); “Popperian” (for philosopher Karl: capable of storing and acting upon information from the world but without understanding); “Gregorian” (for psychologist Richard Gregory: equipped with “thinking tools” and higher-order mental searches). “Only we human beings,” he says, “are Gregorian creatures, apparently.”

Dennett doesn’t attempt to provide details about the genetic and neurological changes that propelled the evolution of organisms from one “degree” to another. Instead, his explanation for what caused humans to evolve from “Popperian” to “Gregorian” creatures were

scious when we started talking – to ourselves! – adding that “consciousness is not just talking to yourself; it includes all the varieties of self-stimulation and reflection we have acquired and honed throughout our walking lives.”

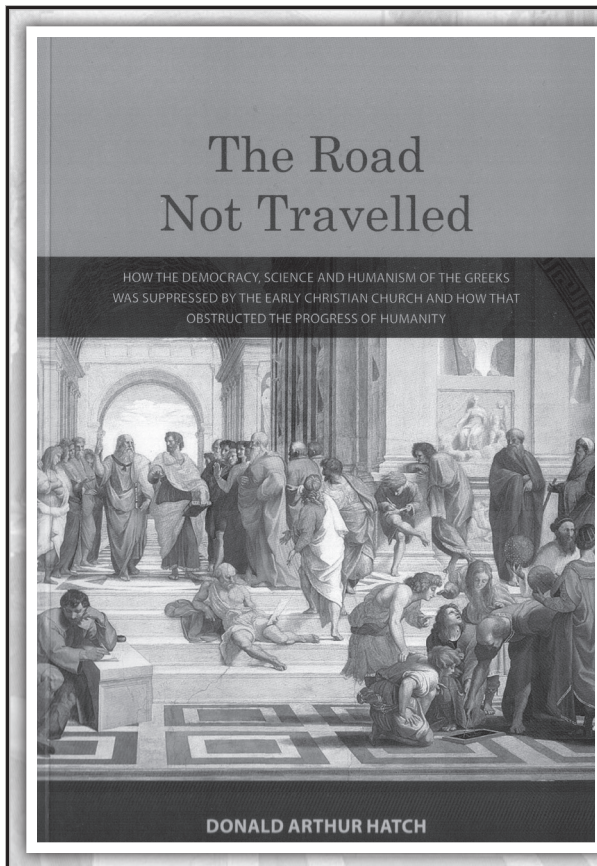
Despite Dennett’s mostly straightforward writing style (and repeated folksy use of “sorta” instead of “sort of”), there are numerous pages such as those about “Shannon information vs. semantic information,” “Bayesian hierarchical predictive coding” and “Gricean-natural meaning” that non-philosophers (like me) may find difficult to follow (I did).

Like Dennett, I’m a materialist and Darwinist (my grandson is named Darwin!) so I didn’t need to wade through over 400 pages to reaffirm what I already believed: that consciousness, including our “inner voice” (my words) is what we experience when certain evolved brain circuits are activated, just as colours, sounds and odours aren’t “out there” but exist only as experiences, when specific wave-frequencies or

chemicals impinge upon sensory receptors and activate neural networks in the brains of humans and other animals.

I don’t think Dennett needed so many pages to make his case and wonder who his target audience was. The book’s very title, in addition to its length, digressions and difficulty, make it very unlikely to be read or found convincing by all those Cartesian dualists and anti-evolution theists Dennett is forever inveighing against. That leaves Humanist readers and a metaphor I’ll borrow from a non-Humanist source: in this book, Daniel C. Dennett has found himself only “preaching to the choir.”•

Michael Schulman, a Life Member of the Humanist Association of Toronto, has served as HAT’s Program Coordinator and Spokesperson, representing the association on TV and radio, in print and public forums. He collaborated with Dr. Robert Buckman on the book Can We Be Good Without God?



Donald Hatch has packed each page with knowledge and with thoughtful comments about our past and about the emergence of a hopeful future as we proceed from the path of religious superstition and supernaturalism into a more enlightened time.

– Goldwin Emerson, Ph.D.

\$18 (CDN or US) postpaid

Order from:

Canadian Humanist Publications
PO Box 3769, Station C
Ottawa, ON K1Y 4J8

or, by email:

manager@HumanistPerspectives.org