

PSYCHOLOGY

That's Incredible!

John T. Jost

Short of Penn and possibly Teller, Michael Shermer is America's most famous skeptic. Years before it was trendy to be an atheist-with-opinions, Shermer was a ruthless public advocate for science and reason and a vigorous debunker of superstitious and religious myths. For decades, he has been the go-to nonbeliever on television talk shows and documentaries, and in the "Prologue" of *The Believing Brain*, Shermer likens his mission to that of skeptical host Leonard Nimoy in the 1970s television series *In Search of...*

In the book, Shermer seeks to advance "not just a theory to explain why people believe weird things" (been there, done that) but "a theory to explain *why people believe things*. Full stop." This is a startlingly ambitious undertaking, requiring as it does an integrative mastery of evolutionary biology, social psychology, and cognitive neuroscience, as well as familiarity with anthropology, sociology, economics, political science, philosophy, history, and more. Truth be told, Shermer is not up to the task—but, then again, who would be?

The problem of overreaching is exacerbated by the author's tone, which is decidedly immodest—though it might be said in his defense that, given his professional success, he has much to be immodest about. Shermer has earned the right to reminisce and recollect, and the first few chapters are personal and autobiographical. It was interesting to read about his childhood, adolescence as a "born again" Christian, and college mentors. Several pages are devoted to Shermer's intellectual crush on Ayn Rand and other libertarian conservatives, such as Milton Friedman and Arnold Schwarzenegger, whom he dubs "the most muscular libertarian in history." Shermer concludes his discourse on the merits of libertarianism with enough self-satisfaction to make *The Terminator* proud: "It is this link between freedom and ideas that brings together my passion for science and my love

of liberty, and has led to the type of science that I practice today."

There are several bright spots in *The Believing Brain*. Shermer's description of the role of dopamine in facilitating the construction of beliefs and associations—including schizophrenic delusions—is riveting. And there is a clever subversion of the standard disciplinary hierarchy within the sciences:

The physical sciences are hard, in the sense that calculating differential equations is difficult, for example. The number of variables within the causal net of the subject matter, however, is comparatively simple to constrain and test when contrasted with, say, computing the actions of organisms in an ecosystem or predicting the consequences of global climate change. Even the difficulty of constructing comprehensive models in the biological sciences, however, pales in comparison to that of the workings of human brains and societies. By these measures, the social sciences are the hard disciplines, because the subject matter is orders of magnitude more complex and multifaceted with many more degrees of freedom to control and predict.

In fact, Shermer's account of human credibility owes a great deal to experimental social psychology, which he acknowledges in the chapter "Confirmations of Belief," albeit less magnanimously than Malcolm Gladwell or David Brooks would have.

There are, however, a few notable omissions. Perhaps most conspicuous is the failure to discuss recent work by Dan Wegner and his students [e.g., (1, 2)] on illusory perceptions of human agency in

the lengthy treatment of "agenticity" (unfortunately, not the only awkward neologism in the book). Shermer also ignores the voluminous research literature on persuasion [e.g., (3)], so he has very little to say about how or when people change their attitudes and beliefs in response to communications from others. Ultimately, any convincing attempt

to understand "why people believe what they do" must reckon with the vast topic of social influence (4).

The late Ziva Kunda's brilliant but complicated 1990 article "The Case for Motivated Reasoning" (5) would have helped Shermer achieve greater nuance, precision, and restraint when he sat down to write that human beings simply "sort through the facts and select those that confirm what we already believe and ignore or rationalize away those that contradict our beliefs." There is an important point to be made about hypothesis-confirming biases, to be sure, but the social psychological evidence hardly warrants unmitigated nihilism about the epistemic value of the mental activity of an entire species—even ours. Self-deception may be common, but it is partial rather than absolute, and it is variable, not constant.

Shermer articulates a position referred to as "belief-dependent realism," in which "Reason's bit is in the mouth of belief's horse." Philosophically speaking, belief-dependent realism seems like an oxymoronic term, insofar as knowledge of reality (the world as it is) can hardly be said to emerge from a process of validating one's previously held beliefs. Similarly, reason exercised solely on behalf of rationalization seems like no reason at all. His hyperbolic suggestion that everyone (including scientists) believes just what they want to believe is generally associated with "postmodernist belief in the relativism of truth," which Shermer disdains on the first page of his book. Although he clearly intends to avoid epistemological relativism (and embrace "provisional moral truths," which he describes as "nearly absolute"), Shermer's philosophical argumentation is largely by assertion, and it is far from clear that he (or even Penn and Teller) could escape from the following "trap," which he sets near the end of the Prologue: "*all* models of the world, not just scientific models, are foundational to our beliefs, and belief-dependent realism means that we cannot escape this epistemological trap."

The chapter "Politics of Belief" opens with an attack on a paper I coauthored (6), so Shermer will not be surprised to learn that I found it the worst in the book by far. He could have rolled up his sleeves and immersed himself in the now-abundant scientific literature documenting significant differences between adherents of leftist (or liberal) and rightist (or conservative) belief systems in terms of personality and cognitive and motivational styles [e.g., (7, 8)] as well as neurocognitive and other physiologi-

The Believing Brain

From Ghosts and Gods to Politics and Conspiracies—How We Construct Beliefs and Reinforce Them as Truths

by Michael Shermer

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cal structures and functions (9–11). Instead, he besmirches the entire enterprise of political psychology, perpetuating canards from the right-wing blogosphere and lazy, empirically unsubstantiated accusations of “liberal bias.” For example, Shermer writes:

Why are people conservative? Why do people vote Republican? The questions are typically posed without even a whiff of awareness of the inherent bias in asking it in this manner—that because Democrats are so indisputably right and Republicans so unquestionably wrong, conservatism must be a mental disease, a flaw in the brain, a personality disorder that leads to cognitive malfunctioning. Much as medical scientists study cancer in order to cure the disease, liberal political scientists study political attitudes and voting behavior in order to cure people of the cancer of conservatism.

In passages such as this, Shermer is not merely hyperbolic, inflammatory, and wrong about the specifics of the scientific articles he purports to critique. (One doubts he even read them.) By resorting to ideological deconstruction and essentially ad hominem forms of attack, Shermer violates his own intellectual standards—succumbing to the tendency, which he scorns in others, to reject out of hand scientific findings that might be experienced as disagreeable. Belief-dependent realism, indeed.

Shermer ought to know better, but he is enabled (and led considerably astray) by Jonathan Haidt, whose non-peer-reviewed Internet provocation “What Makes People Vote Republican?” (12) provides the only data Shermer considers and, at the same

time, a title to which he can object. What happened to the relentless thirst for empirical evidence and the evaluation of such evidence according to rigorous, established scientific criteria? When push comes to shove—as it often does with politics—Shermer sets the evidence aside and trades in stereotypical assumptions about the ideologies and personal backgrounds of the investigators. Consequently, the origins and dynamics of political beliefs shall remain an unsolved mystery to the book’s readers.

The broader point, which is crucial to the future success of the social and behavioral sciences, is not that scientists themselves are somehow immune to cognitive or other sources of bias. It is that the scientific community is and should be ruthlessly committed to evaluating claims and settling disputes through the inspection and analysis of empirical data and through meaningful discussion and debate about how to properly interpret those data, using agreed-upon methodological standards—and not through ideological deconstruction or all too convenient allegations of bias. The politics chapter is therefore not only unscientific, it is anti-scientific.

Let us end on a more upbeat note. Shermer has done much to raise public awareness of the importance of scientific research and to confront Holocaust deniers, 9/11 “truthers,” and others who stubbornly resist logic and evidence. His general commitment to science is appreciated by many—and rightly so. In tackling “why people believe things, full stop,” Shermer has bitten off more than even he can chew. Nevertheless, many readers will learn something from the material that he has taken the time to actually digest. The challenge

posed, both directly and indirectly, by this uneven book is to discern staunch self-confidence—whether it belongs to the author or the believers he is in search of—that is appropriate and justified from that which is not. In *The Believing Brain*, Shermer does not really try to explain why some people hold truer beliefs than others. But the difference between science and other human pursuits suggests that there may be more than one way of believing.

References

1. C. K. Morewedge, J. Preston, D. M. Wegner, *J. Pers. Soc. Psychol.* **93**, 1 (2007).
2. K. Gray, D. M. Wegner, *Pers. Soc. Psychol. Rev.* **14**, 7 (2010).
3. A. H. Eagly, S. Chaiken, *The Psychology of Attitudes* (Harcourt Brace Jovanovich, Fort Worth, TX, 1993).
4. J. C. Turner, *Social Influence* (Open Univ. Press, Buckingham, UK, 1991).
5. Z. Kunda, *Psychol. Bull.* **108**, 480 (1990).
6. J. T. Jost, J. Glaser, A. W. Kruglanski, F. J. Sulloway, *Psychol. Bull.* **129**, 339 (2003).
7. A. S. Gerber, G. A. Huber, D. Doherty, C. M. Dowling, S. E. Ha, *Am. Polit. Sci. Rev.* **104**, 111 (2010).
8. J. T. Jost, C. M. Federico, J. L. Napier, *Annu. Rev. Psychol.* **60**, 307 (2009).
9. D. M. Amodio, J. T. Jost, S. L. Master, C. M. Yee, *Nat. Neurosci.* **10**, 1246 (2007).
10. R. Kanai, T. Feilden, C. Firth, G. Rees, *Curr. Biol.* **21**, 677 (2011).
11. D. R. Oxley *et al.*, *Science* **321**, 1667 (2008).
12. www.edge.org/3rd_culture/haidt08/haidt08_index.html.

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COMPUTER SCIENCE

Canny Minds and Uncanny Questions

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The humans didn’t stand much of a chance. Even before the Man-Made Minds discussion got under way at New York’s World Science Festival in early June, it was clear that the show-stealer wouldn’t be the panel of leading artificial intelligence (AI) researchers or even the doe-eyed robot Kismet, which graced the event poster. All eyes were on the flat-screen television perched on one corner of the stage, its animation pulsing in apparent anticipation.

Watson, IBM’s question-answering machine that in March triumphed over human Jeopardy! champions, is actually housed in a set of computers that take up the space of about 10 refrigerators and guzzle some 80

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