

interpreting texts, whether it be the Bible or scientific theories. She does not see a statement ruling out evolution by natural selection in Genesis 1 and 2, or a statement that requires special creation of species or their fixity. Similarly, when Roughgarden reads biology, she sees that it excludes any deity treated as a scientific explanatory hypothesis, but she does not see that it excludes her God. She believes a scientific proof of God's existence misses the point of religion. As for the Intelligent Design movement, it is junk science and junk religion.

Roughgarden is more worried by people who portray Darwinian theory as profoundly undermining of the ideals of social and family life that her religion fosters. Although the selfish gene is, for her, just amusing hyperbole, there is the serious issue of Darwin's own theory of sexual selection, which she believes is so erroneous that it cannot be repaired. It gets most of the facts wrong; it is the incorrect explanation of them; and it seriously misleads evolutionary psychology. She does not say much about her alternative, social selection; her other book as well as another article (J Roughgarden, M Oishi, and E Ekay. 2006. *Science* 311(5763):965–969) cover that. Although family values would be promoted by her alternative, she is no conservative on such hot potatoes as homosexuality and abortion. Her minimalist reading of the Bible on sodomy and eunuchs is interesting. She does not mention it in the book, but she is a transgendered woman. The author is also quite astute at dissecting arguments against early abortion that purport to show that a new person exists from the instant of its conception. Both issues are bedeviled by polarized thinking.

The content and style are such that I would recommend the book to anyone, even someone at a middle school level, who is troubled by having to reconcile a religious bent with an honest intellect.

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EVOLUTION AND CULTURE: A FYSSEN FOUNDATION SYMPOSIUM. *Based on a symposium held in St. Germain en Laye, France, 12–16 November 1999. Fyssen Foundation Series.*

Edited by Stephen C Levinson and Pierre Jaisson. A Bradford Book. Cambridge (Massachusetts): MIT Press. \$75.00 (hardcover); \$35.00 (paper). xvii + 296 p; ill.; index. ISBN: 0-262-12278-2 (hc); 0-262-62197-5 (pb). 2006.

Although many species exhibit cultural traditions and various forms of social learning, most people would agree that there is something special about human culture. Figuring out exactly *how* it is special, and the evolutionary reasons *why* it is special,

is a formidable task. The contributors to this volume, based on a 1999 Fyssen Foundation Symposium, approach the problem from a range of disciplines, including ethnography, linguistics, neuroscience, paleobiology, primatology, and psychology. Most suggest specific biologically evolved cognitive adaptations that underlie our capacity for culture, although not all of the proposals are equally convincing. The best contributions, by Dunbar and Tomasello, both focus on “theory of mind”—the ability to read another's intentions—which they argue facilitates imitation, teaching, and cumulative cultural transmission. Another highlight is Foley's chapter, where paleobiological evidence is used to argue that the evolution of human culture was gradual not abrupt, and is likely dependent on several cognitive adaptations, not one magical “X factor.” Dunbar and Foley also uniquely propose actual selection pressures that drove this cognitive evolution (protection from free riders and increased male longevity, respectively).

Not all of the chapters specifically address the evolution of culture, however. Two chapters (Boehm; Boyd and Richerson) propose cultural group selection accounts for large-scale human cooperation. Two others suggest a biological basis for mathematics (Gallistel et al.) and morality (Hauser), while Dennett addresses the role of intentionality in cultural evolution. These chapters are all engaging in their own right, but I would have appreciated more effort to link their specific topics to the larger questions posed at the start of the book.

The papers are all accessibly written for nonspecialists, with the exception of Singer's technical and jargon-heavy neuroscience chapter. One criticism is that most contributions appear to have been written around 1999 to 2000, making them somewhat out of date. For example, recent innovative experiments on primate cooperation are absent from Hauser's chapter on moral behavior. The editing could also have been better; figures are mislabeled, and there are several errors in the reference lists. Nonetheless, this volume contains important multidisciplinary contributions by leading researchers of the study of the evolutionary basis of human culture, as well as interactions between biological and cultural evolution.

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