Evolutionary Psychology
human-nature.com/ep – 2006. 4: 432-433

Book Review

Culture in Nature: Are We Alone?

A Review of Stephen C. Levinson and Pierre Jaisson, (Eds.): *Evolution and Culture*, MIT Press, 2006. 296 pp. US$75.00 ISBN 0-262-12278-2 (hardback)

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Three decades have passed since the last chapter of E.O. Wilson's *Sociobiology: The New Synthesis* (1975) hit the dozen or so navel-gazing disciplines interested in the cultural behavior and artifacts of *Homo sapiens*. That chapter clearly set an agenda for integrating the social sciences and humanities into the mainstream of evolutionary theory. It postulated that human culture and the underlying human brain grew out of a process of biological evolution, and continue to be biologically bounded. The central problem for the social sciences was the relationship between genes and culture.

There followed, rather quickly, an explosion of attempts to develop models of such a relationship by R. Alexander; J. H. Barkow, L. Cosmides and J. Tooby; D. Barash; R. Boyd and P. J. Richerson; L. L. Cavalli-Sforza and M. W. Feldman; N. Chagnon and W. Irons; R. Dawkins; W. Durham; J. Lopreato; C. J. Lumsden and E. O. Wilson; S. Sanderson; D. Symons; R. L. Trivers, and others. Despite considerable differences between their respective approaches, a common denominator emerged. Human evolution was clearly on two tracks, one genetic and the other cultural, the first Darwinian, the second Lamarckian, that are partially autonomous of one another, yet complexly related. But how, exactly, are they related?

The present symposium by 17 academics nearly equally divided between the US (9) and Western Europe (France, 3; Germany, 2; the UK., 2; and the Netherlands, 1) variously focuses on a set of questions relating, literally, to the nature of culture: Just what is culture? Do other animals have it, or is it a human monopoly? What made it possible? When did it emerge?

Among these authors, there are substantial divergences, but also a broad consensus or near consensus. They generally reject what I have called the minimum definition of culture as, simply, the social transmission of learned behavior. This minimum culture, often called "tradition" among animal behaviorists, is clearly shared by dozens of avian and mammalian species. The consensus here is that such an ability is trivial and non-cumulative. What is seemingly unique to our species is the human feature of a "ratchet culture" (M. Tomasello), in which cultural acquisitions are not simply transmitted, but cumulatively built upon in a predominantly irreversible way.

Human culture is made possible through a level of cognition in the human brain whereby we can "imagine another individual's state of mind." (R. I. M. Dunbar, p. 173; also S. C. Levinson, p. 34, and W. Singer, p. 183). It is transmitted not only through imitation (which we share with many other species), but through active teaching (Dunbar,

p. 175), using symbolic language (C. Boehm, p. 83; Tomasello, p. 209).

So far, so good, but this is where the consensus begins to splinter. Most authors implicitly accept the "selfish genery" of mainline sociobiology (Alexander, Dawkins, Trivers, Wilson, et al.), and gene- or individual-level selection. Boyd and Richerson accept the possibility of group selection, but pronounce it highly unlikely. Boehm, however, suggests a scenario of altruistic group selection revolving around egalitarian, meat-sharing hunter-gatherers.

As to the origin of human culture, most authors explicitly or implicitly put it at 40,000 to 200,000 years ago with *Homo sapiens* (Tomasello, p. 206), but Foley rejects that view, and suggests it evolved in several extinct hominin lines, including, clearly, Neanderthals, but possibly stretching back to *Homo erectus*. The growth of cognitive skills involved in human culture, he prudently argues, was not a sudden "cultural revolution" some 40,000 years ago, but a gradual development over a million or more years (pp. 56-72).

Besides theoretical arguments, the book contains a range of data, some ethnographic (e.g., Levinson, pp. 18-30, on Rossel Island, New Guinea, linking a genetic form of deafness with a local sign language), some experimental (e.g., Hauser, pp. 219-241, with monkeys and apes, allowing for the possibility of non-humans imagining the feelings of conspecifics, the pathway towards the evolution of morality as he sees it), and some based on comparisons between monkeys, apes and humans (Dunbar, pp. 169-178; Singer, pp. 184-187).

Overall, we have here a rich assemblage of both theory and data, advancing the explication of gene-culture co-evolution. What I missed most from this symposium, however, is a consideration of the biological puzzle of the evolution of self-consciousness. I say "puzzle" because self-consciousness carries with it the psychic burden of conscious mortality, which is of little discernible survival or reproductive value. I see self-consciousness as a by-product of intersubjectivity. An intelligent social animal obviously benefits from an ability to predict the behavior of conspecifics. This is best done by putting oneself in the position of others, which, in turn, inevitably presupposes a concept of self. The presence of self-consciousness in an animal is the best cognitive test of whether the animal can put itself in the mind of others.

One may attack Frans de Waal for anthropomorphism, but he has, to my satisfaction, demonstrated the presence of self-consciousness and intersubjectivity in chimpanzees. The two living species of elephants and some cetaceans seem other plausible candidates. If intersubjectivity is a precondition for the development of culture, as most authors in this collection seem to agree, then is it not imprudently arrogant to claim for *Homo sapiens*, or even for hominins, a monopoly of culture?

One claim to human uniqueness after another has bitten the evolutionary dust. Besides, all such claims are gratuitous. Surely, it does not detract from an understanding of culture-in-nature to admit that our claim to uniqueness is quite narrow. Yes, we are unique in some ways, but so are chimps, and bonobos, and, indeed, all other species. We are not unique in being unique. Furthermore, we can learn at least as much about ourselves by exploring our commonalities with other species as by stressing our differences.