Was Darwin a Social Darwinist?

What is a proper evolutionary view of human culture and morality?

DOUGLAS ALLCHIN, DEPARTMENT EDITOR

Are humans inherently selfish brutes? Skeptics and critics of evolution routinely denounce the ghastly specter of society "red in tooth and claw" as an unacceptable consequence of Darwin's concept of natural selection. They equate Darwinism with so called "Social Darwinism," a belief in ruthless social competition and unmitigated individualism. Many evolutionists, too — even staunch defenders of Darwinism, from Thomas Henry Huxley (1894/1989) to Michael Ruse (1986) — seem to concur that the natural history of humans leaves an ethical void. Darwin himself, by contrast, had a well developed interpretation of the evolution of morality (Richards, 1987). Others since have deepened our biological understanding of human and cultural origins. Perhaps, then, we are ready to challenge this entrenched assumption, this sacred bovine: that belief in evolution entails forsaking any foundation for morality.

Many scientists disavow any role for biology in addressing ethics. They retreat behind the shield of the fact/value distinction or invoke the threat of the naturalistic fallacy. Yet morality is an observable behavior, a biological phenomenon (Stent, 1978). We might well document it in other species. For example, a group led by Jeffrey Mogil recently reported on empathy in mice. When mice observe cagemates (but not strangers) in pain, they exhibit heightened responses to pain themselves (Langford et al., 2006; Ganguli, 2006). Morality deserves a biological explanation, especially for students who wonder about the status of humans in an evolutionary context.

There are important limits, of course. One does well to heed philosophers who warn that we cannot justifiably derive *particular* values or moral principles from mere description. Many have tried, and all have failed (Bradie, 1994; Farber, 1994). "Oughts" do not arise from "Is." Values and facts really are different. Yet why or how we can express values at all, or have moral impulses, or engage in an ethical argument, are all psychological or sociological realities, susceptible to analysis and interpretation. Indeed, a lesson on human evolution may well be incomplete without addressing these very important human traits.

DOUGLAS ALLCHIN has taught both high school and college biology and now teaches History of Science at the University of Minnesota, Minneapolis, MN 55455; e-mail: allch001@umn.edu. He is a Fellow at the Minnesota Center for the Philosophy of Science and edits the SHiPS Resource Center (ships.umn.edu). He hikes, photographs lichen, and enjoys tea.

Darwin as a Social Organism

One may begin, of course, as one often does in topics evolutionary, by returning to the source: Charles Darwin. How did Darwin regard culture? Did he apply Natural Selection to society? Was he a "Social Darwinist," as many take his theory to imply?

Well, Darwin had ten children. Fecund, indeed! Was he self-consciously exhibiting reproductive fitness? If he was (albeit doubtful), it seems peripheral for those who fret about "survival of the fittest" structuring society. They seem to worry about cutthroat competition for wealth and power and other social resources. Thus, journalist Robert Wright (1994) endeavors to portray Darwin as extremely ambitious, his career replete with "relentless ascent, deftly cloaked in scruples and humility" (p. 310). "He did superbly what human beings are designed to do [*sic*]: manipulate social information to personal advantage" (p. 287). Darwin, he contends, was a savvy political animal: a triumphant "alpha-male" among humans (p. 287).

Historian and biographer Janet Browne (1996, 2003), however, offers a quite different portrait. Darwin was a gentle man, as much as a gentleman. He was a loving, even doting father and faithful husband. He advocated for the rights of slaves and defended humane treatment for domesticated animals. He wrote explicitly: "... if we were intentionally to neglect the weak and helpless, it could only be for a contingent benefit, with a certain and great present evil" (1871, p. 169). In his personal life, Darwin hardly displayed the callousness alleged as inherent in his theories.

Darwin was also concerned about interpreting human morality scientifically. In July of 1838 he began a private notebook filled with thoughts on metaphysics and naturalistic approaches to mind and morality (Barrett et al., 1987). (His first thoughts on transmutation were recorded only in May the previous year.) In less than three months, Darwin had filled 156 pages with notes such as:

> *May not moral sense arise from our enlarged capacity or strong instinctive sexual, parental & social*

instincts, giving rise "do unto others as yourself", "love thy neighbor as thyself". Analyse this out.– bearing in mind many new relations from language.– the social instinct more than mere love.– fear for others acting in unison.– active assistance. &c &c. (M150-151)

During that period in 1838 Darwin also read Malthus, the seed that helped him crystallize the concept of natural selection. From the very outset, then, Darwin was thinking about the human and social dimensions of evolution.

In concluding the *Origin of Species* many years later, Darwin advised his readers, with conspicuous understatement, "Light will be thrown on the origin of man and his history" (1859, p. 488). In almost the same breath (although now less renowned), he also forecast a new foundation for Psychology. Darwin knew what he had yet to say.

The Descent of Society

Twelve years passed before Darwin honored his provocative promissory note. When he did, in the *Descent of Man*, he did not fuss much with anatomy. After all, even Linnaeus a century earlier had comfortably classified humans as primates. (One may thus wonder whether curricula about *Australopithecine* bones, upright posture, and brain size *persuade* anyone in the least about evolution.) Darwin prudently dispensed with the morphological evidence in a relatively brief opening chapter. His central focus in Volume 1 was the emergence of mental powers and morality (Chapters 2-3 and 5).

Darwin followed the philosophical discourse of his day and focused not on moral principles, but on moral feelings or sentiments, or as he called it, the "moral sense": crudely, conscience (1871, p. 70). Darwin's focus on emotion and motivation underscores for us today the role of the nervous system. Significantly, genes are peripheral. Genes may help generate nerves and motivational structures. But nervous systems may then operate independently. Memory and learning specifically guide genetically indeterminate, or open, behavior. That organisms can develop such "emergent" functional levels is clear to anyone who understands how lymphocytes generate immunity. Organisms learn individually, whether about antigens or external stimuli. Functional flexibility is part of the organism's self-modifying structure. Nervous systems can thus yield behaviors that function proximally, independently of the more ultimate evolutionary filters of survival and reproduction. Understanding a moral sense, as Darwin aimed to do, thus draws on primarily psychological, not genetic, explanations (Sober & Wilson, 1998; Rottschaefer, 1998). For this reason, most sociobiological studies are relatively uninformative, if not irrelevant, for understanding human morality. They cannot fully explain behaviors mediated by memory and mental assessment. Darwin's focus on the moral sense thus had great significance, in identifying where one might find relevant answers (even today – see Marc Hauser's [2006] *Moral Minds*) .

Darwin postulated four conditions for the emergence of a moral sense. They also reflected prospective stages in its evolution. First, social animals exhibit social instincts of mutual benefit. Second, memory serves as a foundation for conscience. Third, language allows needs to be communicated more effectively. And finally, habit fosters more immediate responses. Moreover, Darwin asserted dramatically:

... any animals whatever, endowed with well-marked social instincts, would inevitably acquire a moral sense or conscience, as soon as its intellectual powers had become as well-developed, or nearly as well developed, as in man. (1871, pp. 71-72).

Morality was not just possible, he claimed, but *inevitable* under certain conditions! Here he portrayed evolutionary causality as quite lawlike.

Consider each feature more fully. First, Darwin highlighted the role of sociality itself. Since Darwin, of course, the evolution of social organization in other animals has been richly documented – and is profiled in most introductory biology texts. Association with other organisms can be adaptive, even when the individual bears some "cost." Once evolved, however, societies may also become a significant further dimension in evolution. Other organisms create a *social* environment. They can shape natural selection, and learned behavior as well. Darwin thus underscored how the values *of the group* would influence individuals. Organisms would thrive socially through "obedience to the wishes and judgement of the community" (1871, p. 73). In a social context, he recognized, self-sacrifice and self-control would be "highly and most justly valued" (p. 97). Eventually, he wrote, "the expressed wishes of the community will have naturally influenced to a large extent the conduct of each member" (p. 98). Darwin recognized variant motives, noting that some individuals might ultimately act from "the fear of punishment, and the conviction that in the long run it would be best for his own selfish interests to regard the good of others rather than his own" (p. 92) (for modern perspectives, see Clutton-Brock & Parker, 1995). As examples of such social sanctions Darwin cited macaws screaming disapproval of a mother leaving a nest (p. 76) and baboons slapping a young animal to enforce silence when plundering a garden (p. 79). Natural selection in a social environment takes quite a different turn. When fitness is partly defined by other members of the group, "survival of the fittest" will also tend to promote contributions to the group's welfare, not selfishness alone. Darwin's analysis of sociality thus conforms loosely to the persistent consensus of philosophers about basic moral precepts, such as the Golden Rule (echoed in more recent studies; Vogel, 2004). More deeply, however, by emphasizing sociality Darwin significantly implied that the role of moral assessment emerged at the level of the society or group, not the individual's decisions. Human behaviors would be selected based on "the wishes, approbation, and blame of his fellow-men" (p. 86). Morality, he observed, was intimately related to sociality.

Second, one may consider memory. For Darwin, organisms would encounter conflicts between social and other instincts. For him, memory enabled retrospective analysis whereby the more enduring social instincts, he imagined, would ultimately prevail. Memory allows integration of short-term and long-term interests. It also allows learning. That would also be critical, for example, in the organism adopting behaviors that reflected the group's values – either through formal instruction or (as we might say today) through positive and negative reinforcement. With learning, moral education becomes possible, as Darwin implied for the cases of the macaw and baboon. Social values can be instilled and inherited culturally and shape behavior, again quite apart from genes or instinct.

Third, Darwin gave a role to language. To respond to the needs of others, Darwin noted, organisms needed to be able to interpret their desires, pain, or other mental states. No surprise then that the immediate sequel to *Descent of Man* was *The Expression of the Emotions in Man and Animals* (Darwin 1872/1965). There Darwin presented an analysis of body postures and facial expressions, showing how even non-human organisms could interpret each other's moods or mental states without words. Even mice seem able to feel another's pain (Langford et al., 2006). Morality is rooted in behavior, not just verbal understanding or philosophical argument. The ability to articulate thoughts, nevertheless, clearly deepens the potential for effective interaction.

Fourth, Darwin added habit as important. He saw that some behaviors adopted during an organism's lifetime can become virtually automatic, thereby seeming like instinct. (Even today, ambiguous use of the term "instinctive" confuses the meanings of innate and undeliberative.) Darwin imagined, ultimately mistakenly, that habit (namely, repetition) would transform new functions into heritable instinct. In his era, of course, knowledge of learning and inheritance was still limited. Darwin also recognized that the emergence of "social instincts," or cooperation, might be problematic under a framework of individualistic natural selection. He appealed to selection at the level of the group, an idea that continues to be controversial (Sober & Wilson, 1998). In both cases, Darwin seems to have stressed instinct and (again) underestimated the potential of learning and cultural transmission of behavior. No doubt he would have been impressed by the later work of Ivan Pavlov, B.F. Skinner, and others, who helped establish just how organisms learn. –And not just in humans. Evidence was recently reported, for example, of explicit teaching in animals: Meerkats provide young with live prey to practice prey-handling skills (Thornton & McAuliffe, 2006; Milius, 2006). Not all behavior is instinct. Not all inheritance is genetic. Morality need not be "in our genes" (see *Sacred Bovines*, April, 2005). Through learning, the moral sense, as Darwin suggested, might ultimately come to be habit, or "second-nature."

From Darwin to the Classroom

Darwin had a well developed theory of a moral society, then, even if incomplete and, by today's standards, in want of revision (for updates, see de Waal, 2006, 1996; Ridley, 1996; Allchin 1999). He hardly endorsed the dog-eat-dog world that many contend his theories imply. Quite the opposite: he profiled how sociality and a social environment would limit and counterbalance any individualism. Darwin was no "Social Darwinist." Indeed, one may wonder how such a name became affixed to so un-Darwinian a perspective – a further puzzle, addressed in next month's *Sacred Bovines*.

Most biology teachers, I suspect, know more about Darwin's voyage on the *HMS Beagle* than they do about his concepts of human mental and moral faculties. That may need to change if lessons on evolution are to be complete–and meaningful to students. Darwin's perspectives provide a valuable benchmark for answering that other great "mystery of mysteries": how a moral society might originate through natural selection. Contrary to widespread assumptions, evolution does *not* entail ethical nihilism. Darwin indeed helped throw light on our moral heritage, opening a field of inquiry that yields ever deeper insights as it continues.

Web Excursions

The Complete Works of Charles Darwin Online: darwin-online.org.uk/.

For news article on empathy in mice, see Ganguli (2006) below. On teaching in meerkats, see Milius (2006).

References

Allchin, D. (1999). Teaching Darwin seriously. *The American Biology Teacher*, *61*(5), 350-55. Also available online at: http://ships.umn.edu/religion/ev-ethic.htm.

Allchin, D. (2005). Genes "R" us. Sacred Bovines. *The American Biology Teacher, 67*(4), 244-246.

Barrett, P., Gautrey, P.J., Herbert, S., Kohn D. & Smith, S. (1987). *Charles Darwin's Notebooks (1836-1844)*. Ithaca, NY: Cornell University Press.

Bradie, M. (1994). *The Secret Chain*. Albany, NY: State University of New York Press.

Browne, J. (1996). *Charles Darwin: Voyaging*. Princeton, NJ: Princeton University Press.

Browne, J. (2003). *Charles Darwin: The Power of Place*. Princeton, NJ: Princeton University Press.

Clutton-Brock, T.H. & Parker, G.A. (1995). Punishment in animal societies. *Nature,* 37, 209-216.

Darwin, C. (1859). *On the Origin of Species*. London: John Murray.

Darwin, C. (1871). *The Descent of Man*. London: John Murray.

Darwin, C. (1872/1965). *The Expression of the Emotions in Man and Animals*. Chicago, IL: University of Chicago Press.

de Waal, F. (1996). *Good Natured*. Cambridge, MA: Harvard University Press.

de Waal, F. (2006). *Primates and Philosophers: How Morality Evolved*. Princeton, NJ: Princeton University Press.

Farber, P. (1994). *The Temptations of Evolutionary Ethics*. Berkeley, CA: University of California Press.

Ganguli, I. (2006). Mice show evidence of empathy. *The Scientist*. Available online at: http://www.the-scientist.com/news/display/23764/.

Hauser, M.D. (2006). *Moral Minds*. New York, NY: Ecco (Harper Collins).

Huxley, T.H. (1894/1989). *Evolution and Ethics*. Princeton, NJ: Princeton University Press.

Langford, D.J., Crager, S.E., Shehzad, Z., Smith, S.B., Sotocinal, S.G., Levenstadt, J.S., Chanda, M.L., Levitin, D.J. & Mogil, J.S. (2006). Social modulation of pain as evidence for empathy in mice. *Science*, *312,* 1967-1970.

Milius, S. (2006). Live prey for dummies: Meerkats coach pups on hunting. *Science News Online*. Available online at: http://www.sciencenews.org/articles/20060715/fob3.asp.

Richards, R. (1987). *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior*. Chicago, IL: University of Chicago Press.

Ridley, M. (1996). *The Origins of Virtue*. New York, NY: Penquin Books.

Rottschaefer, W.A. (1998). *The Biology and Psychology of Moral Agency*. Cambridge, UK: Cambridge University Press.

Ruse, M. (1986). *Taking Darwin Seriously*. New York, NY: Basil Blackwell.

Sober, E. & Wilson, D.S. (1998). *Unto Others*. Cambridge, MA: Harvard University Press.

Stent, G. (Editor). (1978). *Morality as a Biological Phenomenon*. Berkeley: University of California Press.

Thornton, A. & McAuliffe, K. (2006). Teaching in wild meerkats. *Science, 313*, 227-229.

Vogel, G. (2004). The evolution of the Golden Rule. *Science, 303*, 1128-1130.

Wright, R. (1994). *The Moral Animal*. New York, NY: Vintage Books.