

THE MYTH OF MAN THE HUNTER, MAN THE KILLER AND THE EVOLUTION OF HUMAN MORALITY

by Robert W. Sussman

Abstract. Since the discovery of the first man-ape, many have assumed that the earliest humans were hunters and that this was associated with a “killer instinct.” The myth of “man the hunter” was repeated in the 1960s in anthropology texts and popular literature. In the 1970s it was adopted by sociobiologists to explain human nature. “Man the hunter” is used to explain not only human biology but also human morality. The morals described, however, often reflect ancient beliefs and appear to be new ways of justifying old morality codes. The newest version of this myth is presented in a recent book, *Demonic Males*. I will discuss various accounts of this myth and the evidence used to justify them, and will specifically critique the arguments presented in *Demonic Males*.

Keywords: chimpanzees; evolution; humans; hunting; killing; morality; selfish genes.

THE EARLIEST HOMINIDS AS HUNTERS

With the development of the theory of evolution, Charles Darwin put humans in their place with the rest of the animal kingdom, subject to the same laws of nature. In so doing, however, even Darwin visualized a spiritual and intellectual gap between humans and their closest animal ancestors and relatives.

There can be no doubt that the difference between the mind of the lowest man and that of the highest animal is immense. An anthropomorphous ape, if he could take a dispassionate view of his own case would admit that . . . though he could use stones for fighting or for breaking open nuts, yet . . . fashioning a stone into a

Robert W. Sussman is Professor of Anthropology, Washington University, St. Louis, MO 63130, and Editor-in-Chief of *American Anthropologist*. This paper was delivered at the Forty-fourth annual meeting of the Institute on Religion in an Age of Science, Star Island, New Hampshire, 26 July–2 August 1997.

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tool was quite beyond his scope. [These apes] would be forced to acknowledge that disinterested love for all living creatures, the most notable attribute of man, was quite beyond their comprehension. (Darwin 1874, 121–22)

Darwin went on to claim that “no doubt man, in comparison with most of his allies, has undergone an extraordinary amount of modification, chiefly in consequence of the great development of the brain” (1874, 150).

Late nineteenth-century evolutionary theorists took this gap to heart and looked for early human fossils that fit this expectation. Sir Arthur Keith went so far as to set up a rubicon between man and ape.

What sign can we use to mark the end of apehood and the beginning of manhood? The essential mark of man lies neither in his teeth, nor in his postural adaptations, but in his brain, the organ of his mentality. The rubicon between apehood and manhood, so far as concerns brain volume, lies somewhere between the sum for the highest gorilla (650cc) and the lowest aborigine (855cc) . . . a *mean brain volume* of 750cc and over should no longer be regarded as anthropoid but as man. (Keith 1949, 205–6, emphasis added)

It is no wonder that the Piltdown Man (described by Keith), with its apelike jaw and large cranium, was immediately accepted as the earliest hominid ancestor, while the small-skulled, apelike australopithecine discovered by Raymond Dart was considered a pathological specimen or a mere ape. While Piltdown supporters were busy explaining the intellectual endowments of our large-brained ancestors, Dart was convinced that the small-brained creature was the first ape-man, and he developed a theoretical picture of the behavior of this transitional form. At first, Dart believed that the australopithecine, or Southern ape-man, was a scavenger barely eking out an existence in the harsh savannah environment: a cave-dwelling, savannah-living, scrounging ape that did not live to kill large animals, but killed and scavenged small animals in order to live (Dart 1926).

Few cared what Dart believed, however, because few took his ape-man seriously. In fact, it was not until a quarter of a century after its discovery, with the unearthing of many more australopithecines and the discovery in 1953 of the fraudulence of the Piltdown fossils, that students of human evolution realized our earliest ancestors indeed were more apelike than they were like modern humans. With this came the realization that our earliest ancestors must have behaved much like other nonhuman primates. This in turn led to a great interest in using primate behavior as a means to understand human evolution and the evolutionary basis of human nature. Thus, the field of primatology in America began and became a subdiscipline, mainly, of anthropology (Sussman in press). Also, with these discoveries began a long list of theories attempting to infer the behavior, and often the basic moral underpinnings, of the first hominids to take their initial bipedal steps on earth.

By the 1950s more australopithecine fossils were uncovered, and Dart developed a different view of these first hominid fossils. Given the game

animals with which they were associated and some dents and holes in the australopithecine skulls, Dart became convinced that the mammals had been killed, butchered, and eaten by the man-apes, and that these early hominids, indeed, had even been killing one another: "The ancestors of *Australopithecus* left their fellows in the trees of Central Africa through a spirit of adventure and the more attractive fleshy food that lay in the vast savannahs of the southern plains" (Dart and Craig 1959, 195). Dart now saw that, rather than leaving the trees to search out a meager existence in the savannah, it was hunting and a carnivorous lust for blood that drew the man-apes out of the forest and was a main force in human evolution.

Dart's view of human evolution was not devoid of moral judgment. In fact, Dart believed that the earliest hominids, with their innovative subsistence pattern, also created a new moral code. The hunting hypothesis, as it is referred to by Cartmill (1997, 511), "was linked from the beginning with a bleak, pessimistic view of human beings and their ancestors as instinctively bloodthirsty and aggressive." Dart claimed the australopithecines were

confirmed killers: carnivorous creatures that seized living quarries by violence, battered them to death, tore apart their broken bodies, dismembered them limb from limb, slaking their ravenous thirst with the hot blood of victims and greedily devouring livid writhing flesh.

The loathsome cruelty of mankind to man . . . is explicable only in terms of man's carnivorous and cannibalistic origin . . . the world-wide scalping, head-hunting, body-mutilating and necrophilic practices of mankind in proclaiming this common bloodlust differentiator, this predaceous habit, this mark of Cain that separates man dietetically from his anthropoidal relatives and allies him rather with the deadliest of Carnivora. (Dart 1953, 209)

Dart's vision of early human morality, however, is not new in Western myth, religion, and philosophy. Cartmill, in his recent book *A View to a Death in the Morning* (1993), shows that it is reminiscent of earlier Greek and Christian views. Dart himself began his 1953 paper with a quotation from the seventeenth-century Calvinist divine Richard Baxter: "of all the beasts the man-beast is the worst, to others and himself the cruellest foe" (in Cartmill 1993, 10). In 1773 James Burnet (Lord Monboddo) introduced the "man the hunter" theme, arguing that "when necessity forced man to hunt, the wild beast part of him became predominant, war succeeding hunting, and he became fiercer than any other animal—when not subdued by laws and manners" (in Bock 1980, 202). As Cartmill states, many early Christian philosophers believed the following:

We human beings are free . . . to choose what is unnatural for us. It follows from this that only human beings have the capacity to be corrupted. Most ancient philosophers assumed that whatever is natural is good. Since animals always do what is natural for them but people do not, animals are better than people in this regard. . . . The idea that the other animals are by their nature better and saner than man is essentially a modern idea. It commingles classical animalitarianism

with a distinctively Christian belief—the doctrine that in human beings nature herself has gone rotten. (Cartmill 1993, 45)

This view of the depravity of human nature is related to the idea of humanity's fall from grace and of the Christian notion of original sin. As we shall see, these medieval myths of human evolution and of human nature still pervade many modern "scientific" interpretations of the evolution of human behavior, and of human nature and morality.

Dart's evidence for man the hunter was weak, and his particular vision of the human hunter-killer hypothesis did not have much staying power. Upon examination of the evidence, C. K. Brain (1981) noted that the bones associated with the man-apes were exactly like fragments left by leopards and hyenas. The round holes and the dents in the fossil skulls matched perfectly with fangs of leopards and with impressions of rocks pressing against the buried fossils. It seems that the australopithecines likely were the hunted and not the hunters (Cartmill 1993, 1997).

MAN THE HUNTER OR MAN THE DANCER?

The next widely accepted version of this recurring man-the-hunter theme was that presented by the American physical anthropologist S. L. Washburn and his students and colleagues. In a volume entitled *Man the Hunter*, Washburn and Lancaster wrote the often quoted and reprinted article "The Evolution of Hunting." In this article many of the features that define men as hunters again separated the earliest humans from their primate relatives.

To assert the biological unity of mankind is to affirm the importance of the hunting way of life. It is to claim that, however much conditions and customs may have varied locally, the main selection pressures that forged the species were the same. The biology, psychology, and customs that separate us from the apes—all these we owe to the hunters of time past. And . . . for those who would understand the origin and nature of human behavior there is no choice but to try to understand "Man the Hunter." (Washburn and Lancaster 1968, 303)

Like Dart, Washburn related human hunting to human morality, both of which had their biological basis in our evolutionary past.

Man takes pleasure in hunting other animals. Unless careful training has hidden the natural drives, men enjoy the chase and the kill. In most cultures torture and suffering are made public spectacles for the enjoyment of all. The victims may be either animal or human . . . carnivorous curiosity and aggression have been added to the inquisitive and dominance striving of the ape. This carnivorous psychology . . . may have had its beginnings in the depredations of the australopithecines. (Washburn and Avis 1958, 433–34)

Again much like Dart before them, Washburn and Lancaster did not amass a large amount of evidence to support their theory.¹ Rather, they relied upon a nineteenth-century anthropological concept of cultural "survivals" developed by E. B. Tylor (1871); behaviors that are no longer useful

in society but that persist and are pervasive are survivals from a time when they were adaptive. “Men enjoy hunting and killing, and these activities are continued in sports even when they are no longer economically necessary. If a behavior is important to the survival of a species (as hunting was for man throughout most of human history), then it must be both easily learned and pleasurable” (Washburn and Lancaster 1968, 299).

Using a similar logic, I have developed an alternative, less serious, but no less feasible theory—man the dancer. After all, men *and* women love to dance; it is a behavior found in all cultures; and it has a less obvious function in most cultures than does hunting. In the theory of man the hunter, those behaviors and aspects of human nature assumed to be inherited from our ancient ancestors reflected the ideals and values of modern Western society—such as dominant males bringing home the bacon to subordinate females within pair-bonded family groups. Man the dancer would require no such culturally bound restrictions.

Although it takes two to tango, a variety of forms of social systems could have developed from various forms of dance, such as square dancing, line dancing, the riverdance, or the funky chicken. It is likely that the footsteps at Laetoli represent not two individuals going out for a hunt, as we might think, but the Afarensis Shuffle, one of the earliest dances. In the movie *2001: A Space Odyssey*, it was ill-advised to depict the first tool as a weapon when it could as easily have been a drumstick, and the first battle may not have involved killing at all but merely a battle of the bands.

Other activities such as face-to-face sex, cooperation, speaking and singing, bipedalism (it is difficult to dance on all fours), and even moving out of the trees and onto the ground might all be better explained by our propensity to dance than by our desire to hunt. In fact, at least two earlier publications, *The Dancing Chimpanzee* (Williams 1967) and “Did the Australopithecines Sing?” (Livingstone 1973), tried to enlighten us to this possibility. Using the cultural-survival approach, the evidence for dancing is certainly as good as that for hunting.

Between 1961 and 1976 the playwright Robert Ardrey popularized the then-current version of the man-the-hunter/man-the-killer myth with a number of popular books. In these tomes he made a number of amazing claims in the name of the human killer instinct. He believed that it was the competitive spirit, as acted out in warfare, that made humans what we are today: “the mentality of the single Germanic tribe under Hitler differed in no way from that of early man or late baboon” (Ardrey 1961, 171). Because of a lack of this competitive, territorial instinct, Ardrey believed, gorillas had lost the will to live and with it the drive for sex. “He defends no territory, copulates rarely. And the story of the gorilla will end, one day, not with a bang but with a whimper” (p. 325). It is war and the instinct for territory that has led to the great accomplishments of Western man.

How can we get along without war? It is the only question pertaining to the future that bears the faintest reality in our times; for if we fail to get along without war, then our future will be as remarkably lacking in human problems as it will be remarkably lacking in men. . . . Do you care about freedom? Dreams may have inspired it, and wishes promoted it, but only war and weapons have made it yours. (Ardrey 1961, 324)

Although more spectacular than the claims of contemporary scientists, Ardrey's views of human nature did not differ greatly from them, nor from the ancient Christian beliefs of humanity's fall from grace and original sin. To Ardrey, however, sin is good.

We are Cain's children. The union of the enlarging brain and the carnivorous way produced man as a genetic possibility. . . .

Man is a predator whose natural instinct is to kill with a weapon. . . .

If man is unique, and his soul some special creation, and his future is to be determined by his innate goodness, nobility, and wisdom, then he is finished. But if man is not unique, and his soul represents the product of hundreds of millions of patient years of animal evolution, and he approaches a crisis . . . as a proud creature bearing in his veins the tide of all life and in his genes the scars of the ages, then . . . [he] has a future beyond the stormiest contradiction. (Ardrey 1961, 315, 316, 326)

THE HUNTER MYTH AND SOCIOBIOLOGY

This mixing of adaptation and ethics might be considered what has been called evolutionary ethics (Ruse 1994), which is developed further with the next major scientific statement of the importance of hunting in the formulation of human nature. This proclamation was made in the mid-1970s by E. O. Wilson and the proponents of sociobiology. Wilson (1975) describes a number of behavioral traits that he claims are found in humans generally and are thus genetically based—that is, human universals. These include territoriality, aggressive dominance hierarchies, permanent male-female bonds, male dominance over females, and extended maternal care leading to matrilineality.

The argument Wilson uses to support his idea that these traits are biologically fixed, genetically based characteristics is their relative constancy among our primate relatives and their persistence throughout human evolution and in human societies in general. In a previous paper I provided evidence that these behavioral characteristics are neither general primate traits nor human universals (Sussman 1995). Again, these traits were believed to be a product of our evolutionary, hunting past.

For at least a million years—probably more—Man engaged in a hunting-gathering way of life, giving up the practice a mere 10,000 years ago. We can be sure that our innate social responses have been fashioned largely through this life style. With caution . . . we can compare the most widespread hunter-gatherer qualities with

similar behavior displayed by some of the non-human primates that are closely related to Man. Where the same pattern of traits occurs in Man—and in most or all of those primates—we can conclude that it has been subject to little evolution. (Wilson 1976; reprinted in Sussman 1997, 65–66)

Before sociobiology, Social Darwinism had proclaimed that human morality should be based on the evolutionary process of the survival of the fittest (Ruse and Wilson 1985). Those individuals, ethnic groups, races, or societies that were most fit would survive, and those that were weak would be eliminated—and this was good! Competition, especially winning in competition, was the basis of human morality and ethics. Herbert Spencer, the father of Social Darwinism, argued that we should cherish the evolutionary process so that the best or fittest would be able to survive and the inadequate would be rigorously eliminated. This, of course, is reminiscent of Ardrey's proclamations.

It appears that at least some sociobiologists do not find fault with the fact that Social Darwinists linked evolution to ethics but simply that, when this theory was popular, the mechanisms of evolution were poorly understood. As stated by Ruse and Wilson (1985, 50): "Recent advances in evolutionary theory have cast a new light on the matter, giving substance to the dreams of the old theorists."

Given sociobiological tenets, the claim was that we now can proceed from "known facts," rather than mere theory, to ethics. These facts are basically that (1) the goal of living organisms is to pass on one's own genes at the expense of all others, and (2) an organism should cooperate with others only (a) if those others carry some of his or her own genes (kin selection) or (b) if at some later date the others might aid the organism (reciprocal altruism). However, because animals might not be able to make these calculations on the spur of the moment, evolution has endowed our genes with a moral ethic to reciprocate because, ultimately, this may help us, under certain circumstances, to perpetuate and multiply our own genes.

A chain of reasoning leads us to a distinctly human but still biologically based ethical sense. First . . . it is often in an individual's biological self-interest to cooperate with its fellows rather than (as traditional evolutionary ethicists thought) to fight flat out. . . . Secondly, there are ways in which nature can bring about "altruism." . . . If those benefited are relatives, the altruist is still favoring genes identical to his own. . . . Thus we say the individual is altruistic but his genes are "selfish." . . . a policy of rationally assessed self-interest is always followed.

It used to be thought, in the bad old days of social Darwinism when evolution was poorly understood, that life is an uninterrupted struggle—"nature red in tooth and claw." But this is only one side of natural selection . . . the same process also leads to altruism and reciprocity. . . . Morality . . . is merely an adaptation put in place to further our reproductive ends. . . . Ethical codes work because they drive us to go against our selfish day-to-day impulses in favor of long-term group survival . . . and thus, over our lifetimes, the multiplication of our genes many times. (Ruse and Wilson 1985, 50–52)

Thus it seems, to sociobiologists, that evolutionary morality ultimately has allowed us to build group cohesion *in order to* compete with other groups and, in this way, to assist us in passing on our individual genes. We should not look down upon our warlike, cruel nature but rather understand that it is more successful, in an evolutionary sense, if it is coupled with “making nice” with some but not with other individuals or groups of individuals. The “making nice” part (genetically driven) is the basis of human ethics and morality. As Wilson states:

Throughout recorded history the conduct of war has been common. . . .

Darwin saw that not only can group selection reinforce individual selection, but it can oppose it . . . some of the “noblest” traits of mankind, including team play, altruism, patriotism, bravery on the field of battle, and so forth, as the genetic product of warfare. . . .

If the planned society . . . were to deliberately steer its members past those stresses and conflicts that once gave the destructive phenotypes their Darwinian edge, the other phenotypes might dwindle with them. In this, the ultimate genetic sense, social control would rob man of his humanity. (Wilson 1975, 572, 573, 575)

More recently Ruse stated the following:

Where kin selection fails, reciprocal altruism provides a back-up. But as one grows more distant in one’s social relationship, one would expect the feeling to decline. . . . it is silly to pretend that our dealings across countries are going to be intimate or driven by much beyond self-interest. . . . Jesus did not suggest that the Samaritan was in the general business of charity to strangers. (Ruse 1994, 102)

This, I am afraid, sounds very much like the claims of Dart and Ardrey, and the social Darwinists before them. Furthermore, the evidence for any of these human universal traits and the sociobiological tenets is just as weak as was the evidence for Ardrey and Dart. And, speaking of Jesus, how does this relate to the western European, Christian system and views of morality? Again Ruse explains: “If you complain to me that this all starts to sound like warmed over Christianity, I shall agree again, ‘Love your neighbor as yourself’ sounds like a pretty good guide to life to me, and I gather it also does to many other people in non-Christian cultures . . . a major reason why Christianity was such a raging success” (1994, 100–101). But we must always ask, Are the Christian morals professed generated by the scientific evidence for biologically based morality, or do we think they are biological universals *because* they happen to fit our own Christian ethics? Ruse states: “I am not much of a relativist. I condemn as strongly as anyone the rapes in Yugoslavia, the atrocities of Hitler, the ongoing practice of female circumcision” (1994, 106). (This latter is a much different issue altogether, however. See, for example, Lane and Rubinstein 1996.) But morality is usually in the eyes of the beholder, and I have no doubt that the “universal” morality of the Yugoslavs and of Hitler’s Germans (mainly Christians), who committed these offenses, is not the same as that of Ruse.

CHIMPANZEE AND HUMAN MALES AS DEMONIC KILLERS

The newest claim of the importance of killing in the evolution and nature of humans is that made by R. Wrangham and D. Peterson in their book, *Demonic Males: Apes and the Origins of Human Violence*. They argue that, twenty to twenty-five years ago, human aggression was thought to be unique. Research on the great apes had revealed that they were basically unaggressive, gentle creatures and also that the separation of humans from our ape ancestors occurred 15 to 20 million years ago.

Although the earlier scientists proposed that hunting, killing, and extreme aggressive behavior were biological traits inherited from our earliest hominid, hunting ancestors, the majority of anthropologists still believed that patterns of aggression were environmentally and culturally determined, learned behaviors. Our sins were thought by most to be acquired and not inherited characteristics. They were not original (our sins, that is). Wrangham and Peterson argue that new evidence indicates that killer instincts are not unique to humans but that we share this characteristic with our nearest relative, the common chimpanzee. In fact, it is the inherited propensity for killing that allows hominids and chimps to be such good hunters.

Wrangham and Peterson's theory is as follows: The split between humans and common chimpanzees is much more recent than was once believed, only 6 to 8 million years ago. Furthermore, humans may have separated from the chimpanzee-bonobo line after gorillas did, with bonobos splitting from chimps only 2.5 million years ago. Because chimpanzees may be the common ancestor of all these forms, and because the earliest australopithecine was quite chimpanzee-like, Wrangham speculates that "The most reasonable view for the moment is that chimpanzees are a conservative species and an amazingly good model for the ancestor of hominids. . . . If we know what our ancestor looked like, naturally we get clues about how it behaved . . . that is, like modern-day chimpanzees" (1995, 5). Finally, if modern chimpanzees and modern humans share certain behavioral traits, these traits have "long evolutionary roots" and are likely to be fixed, biologically inherited parts of our nature and not culturally determined.

Wrangham goes on by illustrating a number of traits shared by our human ancestors and chimpanzees:

Nut-smashing, root-eating, savannah-using chimpanzees, resembling our ancestors, and capable by the way of extensive bipedalism. Using ant-wands, and sandals, and bowls, meat-sharing, hunting cooperatively. Strange paradox . . . a species trembling on the verge of hominization, but so conservative that it has stayed on that edge. (Wrangham 1995, 6)

Chimpanzees even have different "cultural" traditions in different populations. However, it is not these traits that are of most interest to Wrangham and Peterson. Rather, it is the presumed shared patterns of aggression that

are of utmost importance. Wrangham and Peterson claim that only two animal species, chimpanzees and humans, live in patrilineal, male-bonded communities “with intense, male initiated territorial aggression, including lethal raiding into neighboring communities in search of vulnerable enemies to attack and kill” (1996, 24). Wrangham asks:

Does this mean chimpanzees are naturally violent? Ten years ago it wasn't clear. . . . In this cultural species, it may turn out that one of the least variable of all chimpanzee behaviors is the intense competition between males, the violent aggression they use against strangers, and their willingness to maim and kill those that frustrate their goals. (Wrangham 1995, 7)

Because humans and chimpanzees share these violent urges,

The implication is that strong aspects of human violence have long evolutionary roots. “What are we?” In our aggressive urges we are not Gauguin's creatures of culture. We are apes of nature, cursed over 6 million years or more with a rare inheritance, a Dostoyevskyan demon. . . . The coincidence of demonic aggression in ourselves and our closest kin bespeaks its antiquity. (Wrangham 1995, 7).

So are we doomed to be violent forever because this pattern is fixed within our genetic code? Is the original sin an inborn, fixed action pattern that will ultimately destroy us, or, as asked by Wrangham and Peterson, can we go beyond our past?—get out of our genes, so to speak? These authors believe that, because of their teachings, we can look to the bonobo or pygmy chimpanzee as our potential saviors.

Bonobos, although even more closely related to the common chimpanzee than to humans, have become a peace-loving, love-making alternative to chimpanzee-human violence. How did this happen? In chimpanzees and humans, females of the species select partners that are violent: “while men have evolved to be demonic males, it seems likely that women have evolved to prefer demonic males . . . as long as demonic males are the most successful reproducers, any female who mates with them is provided with sons who themselves will likely be good reproducers” (Wrangham and Peterson 1996, 239). However, among pygmy chimpanzees females form alliances, have been able to reduce male power, and have chosen to mate with less aggressive males. So, after all, it is not violent males that have caused humans and chimpanzees to be their inborn, immoral, demonic selves; it is rather poor choices by human and chimpanzee females.

Like Dart, Washburn, and Wilson before them, Wrangham and Peterson believe that killing and violence are inherited from our ancient relatives. However, unlike these earlier theorists, Wrangham and Peterson argue that this is not a trait unique to hominids, nor is it a by-product of hunting. In fact, it is just this violent nature and a natural “blood lust” that makes both humans and chimpanzees such good hunters. It is the bonobos that help Wrangham and Peterson come to this conclusion. Because bonobos have lost the desire to kill, they also have lost the desire to hunt.

. . . do bonobos tell us that the suppression of personal violence carried with it the suppression of predatory aggression? The strongest hypothesis at the moment is that bonobos came from a chimpanzee-like ancestor that hunted monkeys and hunted one another. As they evolved into bonobos, males lost their demonism, becoming less aggressive to each other. In so doing they lost their lust for hunting monkeys, too. . . . Murder and hunting may be more closely tied together than we are used to thinking. (Wrangham and Peterson 1996, 219)

Thus, like Ardrey, Wrangham and Peterson believe that blood lust ties killing and hunting tightly together, but it is the killing that drives hunting in the latter's argument. In Wrangham and Peterson's version, this lust to kill is based upon the sociobiological tenet of the selfish gene.

The new theory, elegantly popularized in Richard Dawkins's *The Selfish Gene*, is now the conventional wisdom in biological science because it explains animal behavior so well . . . the general principle that behavior evolves to serve selfish ends has been widely accepted; and the idea that humans might have been favored by natural selection to hate and to kill their enemies has become entirely, if tragically, reasonable. (Wrangham and Peterson 1996, 23)

Of course, the selfish gene also explains why bonobos don't kill their enemies. Male bonobos pass on their selfish genes not by being brutal but by being socially attractive—sexy, friendly, mild (Wrangham 1995). This level of theory has about the same explanatory power as did the philosophy of the late eighteenth-century biologist Jeremy Bentham. Bentham claimed that all human behavior is dictated by seeking to enhance pleasure and to minimize the likelihood of pain. In fact, both Bentham's "Moral Philosophy" and the "selfish gene" attempt to explain everything and, therefore, explain very little. But that is for another essay.

Are There Problems with These Theories? As with many of the new sociobiological (or what is now referred to as evolutionary anthropological) theories, I find problems with both the theory itself and the evidence used to support it. Two reasons that Wrangham and Peterson believe that humans and chimpanzees share biologically fixed behaviors are (1) that they are more closely related to each other than chimpanzees are to gorillas and (2) that chimpanzees are a good model for our earliest ancestor and retain conservative traits that should be shared by both. The first of these statements is still hotly debated and, according to various kinds of genetic evidence, chimpanzees, gorillas, and humans are so close that it is difficult to tell exact divergence time or pattern between the three (Marks, Schmid, and Sarich 1988; Marks 1991; Templeton, personal communication).

The second statement is just not true. Chimpanzees have been evolving for as long as humans and gorillas, and there is no reason to believe that ancestral chimps were similar to present-day chimps. The fossil evidence for this period is extremely sparse, and it is likely that many forms of apes have become extinct in the last 5 to 8 million years just as have many hominids.

Furthermore, even if chimpanzees were a good model for the ancestral hominoid, and were a conservative representative of this phylogenetic group, this would not mean that humans and chimps would necessarily share specific behavioral traits. As even Wrangham and Peterson emphasize, chimps, gorillas, and bonobos all behave very differently from one another socially and in their willingness to kill conspecifics. Because of these differences, in fact, Wrangham and Peterson (1996, 26) agree that it cannot just be evolutionary inertia that explains these differences.

Thus, the proof of Wrangham and Peterson's theory does not rest on any theoretical grounds but must rest solely on the evidence that violence and killing in chimpanzees and in humans are behaviors that are similar in pattern; have ancient, shared evolutionary roots; and are inherited. Besides killing of conspecifics, Wrangham includes "infanticide, rape, and regular battering of females by males" (1995, 7) as a part of this inherited legacy of violent behaviors shared by humans and chimpanzees. I will briefly examine the evidence for these behaviors.

Wrangham and Peterson state, "That chimpanzees and humans kill members of neighboring groups of their own species is . . . a startling exception to the normal rule for animals" (1996, 63). They go on to point out that this is especially true of adults killing adults. "Fighting adults of almost all species normally stops at winning: They don't go on to kill" (p. 155). However, as Wrangham and Peterson point out, there are exceptions, such as lions, wolves, and spotted hyenas. In fact, most species do not have the weapons to kill one another as adults. Agonism between adults of the majority of species is common in various circumstances (see, for example, Small 1997), but certainly it would take an adult squirrel or aardvark much more energy to kill a similar opponent than to drive it away. They just do not have the tools. Chimpanzees and humans do, although the tools they use in conspecific fighting are radically different.

Chimpanzee Aggression. Just how common is conspecific killing in chimpanzees? This is where the real controversy may lie. During the first fourteen years of study at Gombe (1950–1964), the chimpanzee was described by Jane Goodall as a peaceful, unaggressive species. In fact, during a year of concentrated study, Goodall observed 284 agonistic encounters: "Of these 66 percent were due to competition for introduced bananas, and only 34 percent could be regarded as attacks occurring in 'normal' aggressive contexts" (Goodall 1968, 278).

Furthermore, "Only 10 percent of the 284 attacks were classified as 'violent,' and even attacks that appeared punishing to me often resulted in no discernible injury. . . . Other attacks consisted merely of brief pounding, hitting or rolling of the individual, after which the aggressor often touched or embraced the other immediately" (Goodall 1968, 277).

Chimpanzee aggression before 1974 was considered no different from

patterns of aggression seen in many other primate species. In fact, Goodall explains that in her monograph *The Chimpanzees of Gombe* she uses data mainly from after 1975 because the earlier years present a “very different picture of the Gombe chimpanzees” as being “far more peaceable than humans” (1986, 3). Other early naturalists’ descriptions of chimpanzee behavior were consistent with those of Goodall and confirmed her observations; even different communities appeared to come together with peaceful, ritualized displays of greeting (Reynolds and Reynolds 1965; Goodall 1965, 1968; Sugiyama 1972; Ghiglieri 1984).

However, between 1974 and 1977, five adult males from one subgroup were attacked and disappeared from the area, presumably dead. Why after fourteen years did the patterns of aggression change? Was it because the stronger group saw the weakness of the other and decided to improve its genetic fitness? Surely there were stronger and weaker animals and subgroups before this time. Perhaps we can look to Goodall’s own perturbations for an answer. In 1965 Goodall began to provide “restrictive human-controlled feeding.” A few years later she realized that this was unwise:

the constant feeding was having a marked effect on the behavior of the chimps. They were beginning to move about in large groups more often than they had ever done in the old days. They were sleeping near camp and arriving in noisy hordes early in the morning. Worst of all, the adult males were becoming increasingly aggressive. When we first offered the chimps bananas the males seldom fought over their food . . . [now] not only was there a great deal more fighting than ever before, but many of the chimps were hanging around camp for hours and hours every day. (Goodall 1971, 143)

By this time the social structure and movement pattern of the animals were already disrupted, and the increasing aggression “eventually created so many problems that observation was almost ended” (Wrangham 1974, 85).

The possibility that human interference—through provisioning, human encroachment, and other changes in the chimpanzees’ environment—was a main cause of the unusual behavior of the Gombe chimps was the subject of an excellent but generally ignored book by M. Power (1991). Wrangham and Peterson (1996, 19) footnote this book; but, as with many other controversies, they essentially ignore Power’s suggestions, stating that yes, this might have been unnatural behavior if it had not been for the evidence of similar behavior occurring since 1977 and “elsewhere in Africa” (Wrangham and Peterson 1996, 19).

What is this evidence from elsewhere in Africa? Wrangham and Peterson provide four examples:

1. Between 1979 and 1982, the Gombe group extended its range to the South, and conflict was suspected with a southern group, Kalande. In 1982 a “raiding” party of males reached Goodall’s camp. Wrangham and

Peterson state, "Some of these raids may have been lethal" (1996, 19). However, Goodall describes this "raid" as follows: One female "was chased by a Kalande male and mildly attacked. . . . Her four-year-old son . . . encountered a second male—but was only sniffed" (1986, 516). Although Wrangham implies that these encounters were similar to those between 1974 and 1977, in this raid little violence was witnessed. However, he states that in 1981 an adult male, Humphrey, was found dead near the home range border. Wrangham fails to mention that Humphrey was approximately 35 years old, and wild chimpanzees rarely live past 33 years (Goodall 1986).

2. From 1970 to 1982 six adult males from one community in the Japanese study site of Mahale disappeared, one by one. None of the animals was observed being attacked or killed, and one was sighted later roaming as a solitary male. T. Nishida, M. Hiraiwa-Hasegawa, and Y. Takahata state: "Why the adult males disappeared in succession remains a puzzle. . . . We speculate that at least some adult males . . . were killed by M-group's chimpanzees." However, the rationale for this assumption was that "At Gombe, adult males of the main study group exterminated those of the branch group" (1985, 287–89).

3. In another site in West Africa, Wrangham and Peterson report that Boesch and Boesch believe "that violent aggression among the chimpanzees is as important as it is in Gombe" (1996, 20). However, in the paper to which they refer, the Boesch simply state that encounters by neighboring chimpanzee communities are more common in their site than in Gombe (one per month versus one every four months) and that this may lead to larger, more cohesive group structures and a "higher involvement of the males in social life" (Boesch and Boesch 1989, 567). There is no mention whatsoever of violence or killing during these boundary encounters.

4. Finally, at a site that Wrangham began studying in 1984, an adult male was found dead in 1991. Wrangham and Peterson state: "In the second week of August, Ruizoni was killed. No human saw the big fight . . . the day before he went missing, our males had been travelling together near the border exchanging calls with the males of another community, evidently afraid to meet them. Four days after he was last seen, our team found his disintegrating body hunched at the bottom of a little slope" (1996, 20). There is no mention of aggressive interactions or killings having occurred in the seven years before this incident or in the six years since.

In fact, this is the total amount of evidence of warfare and male-male killing among chimpanzees after thirty-seven years of research! The data for infanticide and rape among chimpanzees are even less impressive. In fact, data are so sparse for these behaviors among chimpanzees that Wrangham and Peterson are forced to use examples from the other great apes, gorillas and orangutans. However, just as for killing among chimpanzees, both the evidence and the interpretations for gorilla infanticide

and for orangutan rape are suspect and controversial (see, for example, Bartlett, Sussman, and Cheverud 1993; Galdikas 1995).

What about “regular battering of females by males”? Wrangham and Peterson write that males will

often attack females without apparent provocation and with . . . ferocity. Sexual coercion looks to be the underlying reason, because mating patterns in Gombe demonstrate how particularly effective male domination is . . . but a single copulation is probably not the male’s most important reproductive benefit from coercion. By exerting his control, the male can also sometimes force a female into a consortship. . . . And current data suggest that at Gombe infants are especially likely to be conceived during these honeymoons or consortships. (1996, 144–45)

Certainly some agonism is directed toward females by males at Gombe. Although the context is not given, Goodall reports that “During a three-year period, 1975–1977, fifty-one severe attacks of this type were recorded: 83 percent of them were directed against cycling females who were *not* fully swollen at the time. The incidents are puzzling” (1986, 482). However, Wrangham and Peterson’s interpretation appears to be a limited view of the complex and variable mating strategies of chimpanzees. Among these apes mating occurs in three contexts: promiscuous, opportunistic matings in mixed parties; possessive matings in mixed parties; and during consortships.

By far the greatest number of matings occur in the first context, with sometimes more than a dozen males mating with a single female in a short period of time. Any male of the community can mate with estrus females, even at the peak of estrus, and there is little or no competition or aggression between males associated with promiscuous matings. During estrus most females copulate with most or all of the reproductively mature males of their community. In general, mate choice is determined more by females than males (Nishida 1968; Sugiyama 1969; Tutin and McGinnis 1981; Goodall 1986; Morin 1993). In studies focusing on sexual behavior, 73 percent of 1,137 observed copulations were of this promiscuous type (Tutin and McGinnis 1981) as were 92 percent of 660 copulations at Mahali (Hasegawa and Hiraiwa-Hasegawa 1983).

Possessive matings and consortships are rare, and although usually the male initiates courtship, females choose whether or not to cooperate. “We should not lose sight of the fact that the preference of females for individual males may be crucial to the success or failure of a consortship” (Goodall 1986, 474). At Gombe, in the 1,137 copulations observed by Tutin and McGinnis (1981), only two involved force. According to these authors, most preferences involved long-lasting male–female relationships. Certain male characteristics were preferred by females over others and were positively correlated with restrictive mating patterns. Females seemed to prefer males who showed high frequencies of affiliative behaviors, grooming and food sharing. There was no correlation between age of the female,

dominance rank, or amount of agonistic behavior directed toward the female. In his review of the literature on chimpanzee reproductive strategies, Morin remarks that “in both possessive and consortship mating situations, it is apparent that successful males show more affiliative than aggressive behaviors” (1993, 189). McGrew comes to a similar conclusion: “Male involvement in nonopportunistic mating was not correlated with dominance rank (or age, or agonistic behavior directed to females), but was correlated with generosity in banana sharing and time spent grooming and in association with females. That is, females chose to conceive with generous, attentive males, or with the highest-ranking male” (1996, 44).

This is not to say that chimpanzees do not have the propensity for violence under certain circumstances, as some of the above examples show, but simply that the claims of inherent demonism might be greatly exaggerated.

REALITY OR MYTH?

So far, you could say that I have been the devil’s advocate, or perhaps adversary, depending on where you stand. But, you might ask, what if Wrangham and Peterson are correct that we and our chimp cousins are inherently sinners? Now after 5 million years of human evolution and 120 thousand or so years of *Homo sapiens* existence, is there a way to rid ourselves of our inborn evils? Wrangham believes so.

What does it do for us, then, to know the behavior of our closest relatives? Chimpanzees and bonobos are an extraordinary pair. One, I suggest shows us some of the worst aspects of our past and our present; the other shows an escape from it. . . . Denial of our demons won’t make them go away. But even if we’re driven to accepting the evidence of a grisly past, we’re not forced into thinking it condemns us to an unchanged future. (Wrangham 1995, 9)

In other words, we can learn how to behave by watching bonobos. But, if we can change our inherited behavior so simply, why have we been unable to do this before Wrangham and Peterson enlightened us? Surely there is variation in the degree of violence in different human (and chimpanzee) “cultures” and individuals. If we have the capacity to change by learning from example, then our behavior is determined by socialization practices and by our cultural histories and not solely by our nature! This is true whether the examples come from benevolent bonobos or conscientious objectors.

As stated by K. Bock:

surely there can be no disputing the fact that humans are able to be aggressive, and there is little guidance in that observation when we are already aware from historical evidence of warfare and other forms of violence in human experience. . . . to observe merely that there has been natural selection for capacities to carry on a social or cultural activity is of limited significance as long as the variations on which selection works occur in a genetic base that is so general as to serve a great

variety of such activities. Then the range of possible cultural results is not explainable by natural selection. (1980, 76)

Thus, the theory presented by Wrangham and Peterson, although it also includes chimpanzees as our murdering cousins, is very similar to “man the hunter” theories proposed in the past. It also does not differ greatly from some early European and Christian beliefs about human ethics and morality. We are forced to ask, Are these theories generated by good scientific fact, or are they just “good to think,” in the Levi-Straussian sense, because they reflect, reinforce, and reiterate our traditional cultural beliefs? Are the scientific facts being interpreted in such a way as to reinforce our traditional Christian or European myths of morality and ethics? Is the theory generated by the data, or are the data manipulated to fit preconceived notions of human morality and ethics? Because the data in support of these theories have been weak, and yet the stories created have been extremely similar, I am inclined to believe that “man the hunter” is a myth and that the myth will continue to reappear in writings on human nature and morality long into the future.

NOTES

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1. This is not to say that obtaining meat may not have been significant in human evolutionary history. There is still some debate concerning the importance of hunting, scavenging, and gathering during various stages of human evolution (as was emphasized mainly by feminist anthropologists in the alternative “woman the gatherer” scenario of human evolution. See Linton 1975 and Dahlberg 1981. This continues to be an important subject of empirical investigation. However, even if hunting does turn out to be a common subsistence technique among early hominids, this does not necessitate aggressiveness in human interactions. It seems that the neurophysiology of interspecies predation is quite different from the spontaneous violence linked to intraspecific aggression of humans. This was the subject of initial rebuttal by Konrad Lorenz (1963) of early “hunter-killer” scenarios and, more recently, by J. Archer (1988).

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