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Violent Origins

Mimetic Rivalry in Darwinian Evolution

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The essence of evolution as a process has been framed in the following way: “Animals engage in a struggle for existence; for resources, to avoid being eaten, and to breed. Environmental factors influence organisms to develop new characteristics to ensure survival, thus transforming into new species. Animals that survive to breed can pass on their characteristics to offspring.”

These words could have been Charles Darwin's, but they were actually written by the natural philosopher Al-Jahiz, in Baghdad, in the ninth century. So it isn't a very complicated idea. Three things are needed for Darwinian evolution to take place: differential adaptation, which is partly heritable, and results in differential reproductive success. While Darwin emphasized a Malthusian struggle for existence, with animals and plants producing far more offspring than the world can support, so that they must fight one another for sustenance, this is actually not a necessary dimension of the process. What is necessary is that they have differential reproductive success due to partly heritable differential adaptation. They do fight for that.

In the closing passage of *The Origin of Species*, Darwin adroitly skirted the dark side of evolution: “There is grandeur in this view of life . . . from so simple a beginning endless forms most beautiful and most wonderful

have been, and are being, evolved" (Darwin 1864, 425). That was in 1859. But a few years earlier he had written to botanist Joseph Hooker, "What a book a Devil's Chaplain might write on the clumsy, wasteful, blundering low and horribly cruel works of nature!" (Darwin 1901, 105). Yet, interestingly enough, the standard phrases we associate with the dark side of Darwin's theory were coined by others: "struggle for existence" by his great fellow biologist Thomas Huxley (also known as Darwin's Bulldog); "survival of the fittest" by sociologist Herbert Spencer, who applied and misapplied Darwin's theory to human life; and "Nature red in tooth and claw" by Alfred, Lord Tennyson. Nevertheless, all fairly express Darwin's own private thoughts (and fears) about the implications of his theory.

"Fittest," one must hasten to say, does not, in this theory, have anything necessarily to do with medical, muscular, or (least of all) moral fitness. I sometimes envision a runty, tubercular, charming, sociopathic man who persuades many young women to sleep with him. In a time before contraception and abortion, and even to some extent with their availability, he could have high reproductive success without living very long. This is the downside of Darwinian evolution. Certainly, "endless forms most beautiful and most wonderful have been, and are being, evolved" (Darwin 1864, 425). But at the same time, by the same process, some things that are neither beautiful nor wonderful have also been produced and preserved.

Darwin, who was in the first place a keenly observant and deeply insightful naturalist, understood early on that it was not just about survival. Also in *The Origin of Species*, he wrote "a few words about what I call sexual selection":

This depends, not on a struggle for existence, but on a struggle between the males for possession of the females; the result is not death to the unsuccessful competitor, but few or no offspring. Sexual selection is, therefore, less rigorous than natural selection. Generally, the most vigorous males, those which are best fitted for their places in nature, will leave most progeny. But in many cases, victory will depend not on general vigour, but on having special weapons, confined to the male sex. A hornless stag or spurless cock would have a poor chance of leaving offspring. Sexual selection by always allowing the victor to breed might surely give indomitable courage, length to the spur, and strength to the wing to strike in the spurred leg, as well as

the brutal cock-fighter, who knows well that he can improve his breed by careful selection of the best cocks. . . . The war is, perhaps, severest between the males of polygamous animals, and these seem oftenest provided with special weapons. (Darwin 1864, 83–84)

Despite the obvious sexism of the language, this is a clear statement of principle, and Darwin goes on to offer a brighter side of the process:

Amongst birds, the contest is often of a more peaceful character. All those who have attended to the subject, believe that there is the severest rivalry between the males of many species to attract by singing the females. The rock-thrush of Guiana, birds of paradise, and some others, congregate; and successive males display their gorgeous plumage and perform strange antics before the females, which standing by as spectators, at last choose the most attractive partner. . . . If man can in a short time give elegant carriage and beauty to his bantams, according to his standard of beauty, I can see no good reason to doubt that female birds, by selecting, during thousands of generations, the most melodious or beautiful males, according to their standard of beauty, might produce a marked effect. (Darwin 1864, 84–85)

So we have either the spectacle of males tearing at each other or that of males preening and strutting. Either way, it's a disturbing process by which much of the history of life has been played out. We now consider the role of violence in this process.

Violence in Nonhuman Species

Conflict, as observed in all motile animals, occurs over scarce resources such as food, space, or mates. In an older view, threats and other aggressive displays were thought to reduce violence by spacing individuals and stabilizing their hierarchies (Wynne-Edwards 1962). Humans, on this view, kill each other because weapons distance us from our victims, rendering submissive displays and other natural constraints on violence weak or useless (Lorenz 1970). This view persisted in part because of lack of opportunity to observe animal

killings. If a baboon troop had the same violent death rate as Americans, it could take centuries to observe even a single killing (Wilson 1975, 246–47). As fieldwork expanded, many species were found to kill their own kind.

A crucial case is competitive infanticide, first studied in Hanuman langurs (Hrdy 1977, 1979). Matrilineal kin and their young make up the core of langur groups; adult males may stay for a year or longer but are ultimately transient. When new males appear, they try to drive off the resident males. If successful, they kill all infants below six months of age. Female resistance is brave but futile; they cycle back into fertility again and mate with the new males. Similar phenomena were described in chimpanzees, lions, wild dogs, and many other species (Hausfater and Hrdy 1984). In this and many other natural circumstances, violence evolved to help individuals and coalitions gain and keep resources, including mates. Dominant males mate with ovulating females in baboons (DeVore 1965; Hausfater 1975), rhesus monkeys (Wallen and Tannenbaum 1997), and other species; competition for fertile females is a main cause of conflict. Male violence against females is also common in monkeys and apes, and often leads to sexual coercion (Smuts 1992; Smuts and Smuts 1993).

Chimpanzee aggression can be extreme, including attacks on females by the larger males, competitive infanticide by females, and violence between groups at territorial boundaries (Goodall 1977, 1979, 1986; Manson and Wrangham 1991; Wrangham and Peterson 1996). One or two victims temporarily separated from their own group are stalked and attacked by a group of males that beat, stamp, drag, and bite them to death. Females may be killed but are more often absorbed into the other group. In the Gombe Stream Reserve in Tanzania, entire groups of males have been eliminated and females absorbed according to this pattern (Goodall 1986).

Similar chimpanzee ambush-killings occur in the Kibale National Park in Uganda, where they have been studied for over a decade. The best predictor of such an attack is a critical number of adult males. In a group of 150 chimpanzees of both sexes and all ages (Gibbons 2004), the critical mass was about eighteen congregating males. They would grow more excited before going out into the forest in single file, maintaining an unusual quiet, and bypassing hunting opportunities until they passed the outer bound of their own territory. If they found a lone male from the neighboring group, they jointly assaulted this victim, on five different occasions killing him.

It is important to note that bonobos, a species of ape as closely related to us as chimpanzees, do not show this kind or degree of violence (Kano 1992; Wrangham and Peterson 1996). The bonobo genome was recently sequenced, and comparative genetic analysis will ultimately tell us the extent to which we share the violent genes of the chimpanzee, the nonviolent genes of the bonobo, or some of both. Future field studies may suggest how much of bonobo nonviolence is related to the fact that they are on the verge of extinction. However, at present there is evidence for our greater similarity to chimpanzees in our own behavior and in the fossil record.

Violence during Human Evolution

For the first part of the proto-human fossil record, there is little evidence of violence, but there are in all only a few hundred specimens, mostly small parts of skeletons. The Neanderthals are the first hominins for whom there are large numbers of individuals represented. They are currently viewed as being mainly off the ancestral line to modern humans, although they probably interbred with our direct ancestors. They were very similar to us genetically, and were behaviorally similar as well. Neanderthal fossils, especially those found at the Shanidar site in Iraq, show a great many injuries, where the skeletons include many healed and unhealed fractures (Trinkhaus 1978; Trinkhaus and Howells 1979). One male has a partly healed scar on the top of his left ninth rib due to a sharp object that forcefully entered his chest (Trinkhaus 1995). He may have had a collapsed lung, and in any case survived just a few weeks after the injury. At Skhul, another Neanderthal site, one skeleton has spear damage in the leg and pelvis (LeBlanc and Register 2003). These remains show clearly that forty or fifty thousand years ago there was lethal violence among Neanderthals, and their high overall rate of injury is likely owing in some measure to violence.

There is also clear evidence of cannibalism (Culotta 1999; Defleur, White, et al. 1999). In the cave of Moula-Guercy in Ardèche, France, Neanderthal bones dated to one hundred thousand years ago were butchered with the same methods used on deer and goats in the same area. But from other evidence, cannibalism is probably much older than that, and it has persisted up to recent times, sometimes associated with mortuary rites, sometimes

with violence (Sanday 1986; Villa et al. 1986; White 1992; DeGusta 1999; Wade 2000). The later fossil record of modern humans before the invention of agriculture also shows scattered evidence of violence.

After that, the evidence is abundant, and archaeology has demolished the myth of the peaceful savage (Keeley 1996; LeBlanc and Register 2003). In fact, we know now that belief in this myth required substantial blindness to evidence, in accounts that were in effect “interpretive pacifications” (Keeley 1996). The fossil record remains sparse for most of prehuman evolution, and even in violent human societies most people die nonviolently, so it is remarkable that we see as much as we do in the record. Homicidal violence has evidently been part of our own species’ way of life for at least twenty-seven thousand years (Keeley 1996). At Grimaldi in Italy, a projectile point was found embedded in a child’s spinal column. Czechoslovakian cemeteries from around the same time show substantial violent death, perhaps on a large scale. A Nile Valley man buried twenty thousand years ago had stone projectile points in his abdomen and another in his upper arm. Between fourteen thousand and twelve thousand years ago there are many more such cases in Egyptian Nubia, and pre-agricultural sites in Europe show that violence was common, including the “Iceman” of five thousand years ago, whose well-preserved body bears an arrow in the upper back. He was apparently alone in the mountains, had a last meal, was pursued by an enemy, shot from behind, and bled to death.

All this violence took place during the hunter-gatherer phase of human prehistory, many thousands of years before agriculture, which is widely thought to have worsened violence. Ethnographic and demographic research also reveals homicides in many recent hunter-gatherer societies, including the !Kung, Eskimo, Mbuti, Hadza, and others (Lee 1979; Knauft 1987). It is often said that hunter-gatherers did not have group-level violence, but this claim is no longer sustainable. One cross-cultural study showed that almost two-thirds of such societies had combat between communities at least every other year (Ember 1978). The sample in this particular analysis is questionable—for example, it includes numerous equestrian hunters of the Great Plains and elsewhere, not appropriate models for the general human past since our ancestors did not have horses.

Still, ethnographies of classical warm-climate hunter-gatherers show that their level of intergroup combat has been underestimated (Eibl-Eibesfeldt

1979). Southern African rock paintings, Australian aboriginal clubs and shields, and common spear wounds in two thousand-year-old skeletons in the American Southwest also point to group violence among recent hunter-gatherers (LeBlanc and Register 2003). Recent mathematical models of the evolution of cooperation, which is highly evolved in our species, suggest that it could easily have resulted from group selection in severe and widespread intergroup conflict among our hunter-gatherer ancestors (Bowles 2009; Bowles and Gintis 2011).

After the invention and spread of agriculture, archaeological evidence of warfare in widely separate parts of the ancient world becomes decisive. Many skeletons show embedded arrow and spear points, left-sided skull fractures (caused by blows with weapons in the enemy's right hand), and parry fractures of the lower arm sustained in warding off such blows. Numerous sites include graves with weapons and armor, and fortifications are ubiquitous (Keeley 1996; LeBlanc and Register 2003). *The Iliad* and the biblical books of Judges and Kings describe the continual clash of agricultural tribes and early civilizations. We can in fact summarize history since the hunter-gatherer period as a process of ongoing, expansionist tribal warfare (Schmookler 1983; Keegan 1993).

Extrapolating from ethnography, true warfare appears to have emerged with the transition from smaller to larger chiefdoms, followed by the emergence of the state (Earle 1991). Increasing population density made social stratification, division of labor, and taxation important. Alliances among religious, economic, and military elites led these societies, which continued to grow by conquest, but the process preceded the state; the Nuer, pastoralists of the Sudan, became an effective organization for predatory expansion at the expense of their Dinka neighbors, despite the relatively low level of social complexity in each group (Sahlins 1961; Kelly 1985).

Among people like the Aztecs and ancient Mayans, power was more centralized and the military more effective (Otterbein 1970). Such hierarchical societies emerged as states rather than tribes or chiefdoms, and their level of social organization corresponds to that of the legendary rivals of the Bronze and Iron Ages. Going from there to the wars of modern states is mainly a matter of advancing technology (Schmookler 1983; Cook 2003). Nationalism, as Arnold Toynbee put it, is new wine in the old bottles of tribalism (Toynbee 1972).

Violence in Small-Scale Recent Societies

The ethnographic record strongly suggests that violence is simply part of human behavior (Bohannon and American Museum of Natural History 1967; Otterbein 1970). Among the most violent traditional cultures were the Yanomamö of highland Venezuela, the Dani and Enga of highland New Guinea, the equestrian Great Plains Indians of the United States, the Aztecs, the Mongols, and the Zulus of nineteenth-century southern Africa. These cultures were very violent. Of all adult male deaths among the Enga, one in four were due to violence, and the Enga way of life was largely organized around it (Meggitt 1977). For the Yanomamö, known as “the fierce people” by themselves and others, conditions were similar (Chagnon 1968, 1992). Forty percent of Yanomamö men had committed homicide at least once, and those who had done so had more offspring than those who had not (Chagnon 1988). These and many other violent cultures have led some anthropologists to conclude that we are a very bloody species composed of “sick” societies (Edgerton 1992). Many older ethnographic accounts of warfare in traditional cultures, including some that have now been pacified, suggest that ethnographers, like archaeologists, have underestimated it (Eibl-Eibesfeldt 1979).

However, rates of homicide span three orders of magnitude among cultures, and these differences matter. Consider the least violent societies. The !Kung San of Botswana have been considered nonviolent (Thomas 1959; Marshall 1976), yet their homicide rate at least matched that of American cities (Lee 1979) and there were also many nonfatal individual assaults and fights (Shostak 1981, 2000). While they have not carried out intergroup conflict in recent times, their contempt for other ethnic groups and even for !Kung in neighboring areas suggests that they have the psychological disposition for group conflict, and historical data suggest that they conducted violent raids on neighboring village-camps in the past (Eibl-Eibesfeldt 1979).

Among the Semai, simple horticulturalists of Malaysia, violence was reported to be abhorrent and virtually absent. “Since a census of the Semai was first taken in 1956, not one instance of murder, attempted murder, or maiming has come to the attention of either government or

hospital authorities” (Dentan 1968). Cultural ideology and child-care patterns seemed to explain this:

A person should never hit a child because, people say, “How would you feel if it died?” . . . Similarly, one adult should never hit another because, they say, “Suppose he hit you back?” . . . The Semai are not great warriors. As long as they have been known to the outside world, they have consistently fled rather than fight, or even than run the risk of fighting. They had never participated in a war or raid until the Communist insurgency of the early 1950’s, when the British raised troops among the Semai, mainly in the west. . . . Many did not realize that soldiers kill people. When I suggested to one Semai recruit that killing was a soldier’s job, he laughed at my ignorance and explained, “No, we don’t kill people, brother, we just tend weeds and cut grass.” (Dentan 1968, 58)

However, in the 1950s, the Semai had become involved in British counterinsurgency against Communists, and in this their behavior was very different:

Many people who knew the Semai insisted that such an unwarlike people could never make good soldiers . . . they were wrong. Communist terrorists had killed the kinsmen of some of the Semai counterinsurgency troops. Taken out of their nonviolent society and ordered to kill, they seem to have been swept up in a sort of insanity which they call “blood drunkenness.” . . . “We killed, killed, killed. The Malays would stop and go through people’s pockets and take their watches and money. We did not think of watches or money. We only thought of killing. Wah, truly we were drunk with blood.” One man even told how he had drunk the blood of a man he had killed. (Dentan 1968, 58–59)

Yet after that war, Semai life returned to normal:

Talking about these experiences, the Semai seem, not displeased that they were such good soldiers, but unable to account for their behavior. It is almost as if they had shut the experience in a separate compartment. . . . Back in Semai society they seem as gentle and afraid of violence as anyone else. To them their one burst of violence appears to be as remote as

something that happened to someone else, in another country. The non-violent image remains intact. (Dentan 1968, 59)

These events could merely suggest what happens when men are torn from their accustomed cultural context, and perhaps it was their very inexperience with violence that made their behavior as soldiers extreme. But in any case, the Semai experience shows that upbringing and cultural ideology are only part of what shapes the human tendency to violence.

Nevertheless, the differences among societies are important and should be understood. In a broad cross-cultural study designed to sample the ethnographic universe representatively, matrilineal societies had less warfare than patrilineal ones (Ember and Ember 1971; Divale 1974). Another study showed that where husband-wife intimacy is high—where husbands and wives sleep and eat together and share the child care—organized intergroup conflicts are less frequent (Ember and Ember 1971; Divale 1974). Societies organized around frequent or intermittent warfare tend to segregate men, with distinct men's houses for eating and sleeping, and often have men's societies that initiate boys under stress and actively train them for warfare. The social dynamic of male groups can foster violence (Tiger 1969), and this is apparently an important process in recent terrorist actions (Sageman 2008). This can be thought of as a slower, more complex, human version of the building excitement of groups of male chimpanzees that results in violence toward other groups.

It is clear from cross-cultural statistical research that after a society has been pacified by external powers, it becomes less interested in training boys to be aggressive (Ember and Ember 1994). Among the Enga, previously very violent, warfare has been reduced to very low levels (Wiessner and Pupu 2012). Similar reductions have been seen in other previously violent cultures such as the Gusii (Knauff 1987). And there is evidence that the levels of violence in industrial and postindustrial societies have declined substantially over the past few centuries (Pinker 2011). These trends indicate that the right social and cultural conditions can greatly reduce human violence. However, they do not necessarily show that the human capacity for violence, or our tendency to violence, has fundamentally changed. Also, the decline of violence under pacification of violent traditional societies should serve to make us more cautious about calling cultures nonviolent on the basis of ethnographic research done long after such pacification.

How Does Aggression Lead to War?

The evidence for biological mechanisms of aggression has been reviewed many times (Nichoff 1999; Konner 2002, 2006a, 2006b). A wide range of both animal and human studies leave no doubt that physical violence has a strong genetic component, that it develops in predictable ways only partly dependent on upbringing and enculturation, that it is carried out in increasingly understood brain circuits, and that it is influenced by hormones, especially androgens, having influence both during early development and after sexual maturation—a fact that accounts for the well-established, innate predominance of males in violent acts. These biological factors, together with psychosocial and cultural influences, will ultimately explain individual violence. But how does this become group violence?

Three processes, each drawing on a strong human tendency that is separate from the tendency to violence, can be identified: dichotomizing or splitting the social world, which psychoanalyst Erik Erikson called “pseudo-speciation”; emotional contagion and other processes of group psychology; and following leaders.¹

Violent rivalries do not reflect just the proven human tendency to violence, but also the tendency to dichotomize the social world. It is partly a special case of dualistic thought in general, identified by Marcel Mauss, Claude Lévi-Strauss, and others as cross-culturally universal (Douglas 1966; Lévi-Strauss 1968; Maybury-Lewis and Almagor 1989). Divisions emphasized in the language, religion, and customs of varied cultures include night vs. day, human vs. animal, village vs. “bush,” tame vs. wild, good vs. evil, polluted vs. pure, profane vs. sacred, male vs. female, right vs. left. The underlying reality is usually a weak dichotomy or a continuum, but it is exaggerated or distorted by mental processes into strongly contrasting divisions.

Splitting is related to the generally low human tolerance for ambiguity and cognitive dissonance (Festinger 1957). In language, this is crucial; there is a physical continuum between *p* and *b*, but we must decide which one we are hearing in order to preserve meaning (Jakobson and Halle 1971). This also applies to other cognitive processes. As we evolved, we often had to make rapid decisions, made easier by having two clear choices. We must classify every stimulus as familiar or strange and decide on approach or avoidance. In

the social realm, dichotomies of kin and non-kin, us and them, real people versus barbarians, heathen, Gentiles, or strangers are found in almost all cultures.

Dichotomies also have an emotional dimension. Fear of the strange is characteristic of complex nervous systems, with a continuum from attention to arousal to fear. Weak stimulation of the amygdala can produce alertness, while stronger stimulation in the same area will produce fear (Ursin and Kaada 1960). Novelty, depending on the context, may produce either attention or fear in infants. Socially, the second half-year of life sees a rise of new distinctions, including attachment to a primary caregiver and wariness or fear of strangers (Bowlby 1969–77; Lewis and Rosenblum 1973). These reactions are ultimately the basis of adult xenophobia.

Social psychologists have traced the emergence and consequences of the us-them distinction. The Robbers Cave Experiment (Sherif, Harvey, et al. 1961) brought 22 average eleven-year-old boys to a summer camp. All were from middle-class white Protestant families, with similar educational backgrounds. At the camp they were randomly assigned to one of two matched groups that differed in no measurable way. Despite joint activities and attempts to discourage competition, the groups began to compete, naming themselves, speaking disparagingly of each other, and reacting to each other's incursions with territorial defense. Formal competitions with trophies and prizes followed, and "good sportsmanship" gave way "to name calling, hurling invectives, and derogation of the outgroup . . . [to the] point that the groups became more and more reluctant to have anything to do with one another" (101). Over several weeks, "derogatory stereotypes and negative attitudes toward the outgroup were crystallized" (210). This dichotomization proved reversible, but it is noteworthy how quickly bigotry was created in two groups with no initial differences between them. Similar findings have been made many times with adults and under more controlled conditions. They confirm that it is easy to establish prejudice against arbitrarily formed out-groups, and to exacerbate the prejudice by giving people frustrating experiences or challenging their self-esteem (Tajfel 1982; Robinson and Tajfel 1997).

Other aspects of group psychology are also well studied. Fear and anxiety in a complex and unpredictable world is partly relieved by reducing responsibility for our actions. We do this by following rules, taking collective action, or following a leader. Rules are often benign, but the mass or crowd

psychology that sometimes arises in group action is far more problematic. Charles Mackay, in his nineteenth-century classic *Extraordinary Popular Delusions and the Madness of Crowds*, wrote:

In reading the history of nations, we find that whole communities suddenly fix their minds upon one object, and go mad in its pursuit; that millions of people become simultaneously impressed with one delusion, and run after it, till their attention is caught by some new folly more captivating than the first. We see one nation suddenly seized, from its highest to its lowest members, with a fierce desire of military glory; another as suddenly becoming crazed upon a religious scruple; and neither of them recovering its senses until it has shed rivers of blood and sowed a harvest of groans and tears, to be reaped by its posterity. . . . Men, it has been well said, think in herds; it will be seen that they go mad in herds, while they only recover their senses slowly, and one by one. (Mackay 1932)

Mackay reviews a wide variety of collective actions: lynch mobs and witch hunts, reckless investment schemes such as the South Sea Bubble and the Tulip mania, fads, pilgrimages, revolutions, and wars. Collective violence may be seen as an instance of human susceptibility to emotional contagion, a phenomenon that has since been well studied by social psychologists (Hatfield, Cacioppo, et al. 1994). In terms of evolutionary background, humans are not herding animals but participants in small groups with more complex social patterns, yet the rudiments of these processes are present. Other classic psychological studies show that a person will deny the evidence of his or her senses, even with respect to something as simple as the relative length of printed lines, if a few others (stooges of the investigatory) are in agreement against his judgment (Asch 1951). However, the contagions Mackay describes may result partly from mass societies that violate the small-group dynamics we evolved with.

Irrespective of group size, a common expression of mass psychology is the identification and destruction of enemies, which may be called *contagious enmity*. It has two principal forms. The first identifies weak internal enemies, then isolates and destroys them, as in the examples of lynch mobs, witch hunts, inquisitions, and genocide. The victims are viewed as strange, confusing, evil, and dangerous to the spiritual and physical life of the larger group.

In an extension of Girardian principles of sacrificial violence (Girard 1977; Burkert, Smith, et al. 1987), killing them becomes a form of ritual purification.

The second form of contagious enmity identifies external enemies, who are similarly condemned but who are capable of group self-defense. If bloodshed is sacralized in primitive and ancient ritual, then the concept of holy war becomes more comprehensible; people send their children into battle, and when they are killed, their blood makes the cause sacred. Sacrifices purify the community by exporting sins to the victim, but raiding and ambush-killing of defenseless neighboring enemies may play an intermediate role. For example, Ilongot headhunting is directed against external enemies, yet “it involves the taking of a human life with a view toward cleansing the participants of the contaminating burdens of their own lives” (Rosaldo 1980, 140). Through mimetic emotional contagion, the collective fear of two groups engaged in reciprocal contagious enmity will each finally justify the other’s responses. What may at first have been a largely irrational fear becomes quite rational as each side sees the real threat in the other.

Following leaders and obeying orders generally is, of course, necessary for most martial actions. The fearful infant flees to a protective caregiver, and if the infant’s fear of strangers is transformed in adulthood into denigration or hatred, then the adult’s flight to a protector may take the form of obedience, conformity, chauvinism, or loyalty. Freud, in *Group Psychology and the Analysis of the Ego*—“group psychology” being a debatable translation of the German word *Massenpsychologie*—argues that although the process operates with a leader (Freud 1949), something resembling mob psychology is apparent: “the lack of independence and initiative in their members, the similarity in the reactions of all of them . . . the weakness of intellectual ability, the lack of emotional restraint, the inclination to exceed every limit in the expression of emotion and to work it off completely in the form of action” (81–82). But Freud did not restrict his model to popular delusions:

We are reminded of how many of these phenomena of dependence are part of the normal constitution of human society, of how little originality and courage are to be found in it, of how much every individual is ruled by those attitudes of the group mind which exhibit themselves in such forms as racial characteristics, class prejudices, public opinion, etc. (82)

Freud deemed group psychology as identical to hypnosis, especially in “the behavior of the individual to the leader” (78). In his view, both the leader and fellow group members have a hypnotic suggestive power. The flight to a protector—the “escape from freedom” (Fromm 1994)—is to the dichotomous certitude of leader and group alike. Freud’s two main examples are armies and churches, both of which have an “us–them” distinction at their core; hypnosis thus becomes focused in relation to an enemy.

The submission of individual choice to authority is shown in Stanley Milgram’s famous experiments: naive subjects were ordered to give what they thought were electric shocks to an unseen person (Milgram 1963, 1974). Most of the subjects delivered what they believed were very dangerous shocks when ordered to by a man in a white laboratory coat. Milgram later asked: “What is the limit of such obedience? . . . We attempted to establish a boundary. Cries from the victim . . . were not good enough. The victim claimed heart trouble; subjects still shocked him on command. The victim pleaded to be let free, and his answers no longer registered on the signal box; subjects continued to shock him” (Milgram 1974, 188). The encouragement of peers strengthened the subjects’ obedience.

Milgram clearly states that this is “not aggression, for there is no anger, vindictiveness, or hatred in those who shocked the victim. . . . Something far more dangerous is revealed: the capacity for man to abandon his humanity, indeed, the inevitability that he does so, as he merges his unique personality into larger institutional structures” (188). Philip Zimbardo’s extremely disturbing experiments in which Stanford students role-played as guards and prisoners underscored the power of these processes, which made the one group as brutal as the other was cowed. As Milgram said, “This is a fatal flaw nature has designed into us, and which in the long run gives our species only a modest chance for survival” (188).

Sacred Violence, Mimetic Rivalry, and War

In works such as *Things Hidden since the Foundation of the World* and *Violence and the Sacred*, René Girard confronted fully the possibility that bloodshed may be at, or close to, the heart of all human social life:

To make these processes effective once again, people are tempted to multiply the innocent victims, to kill all the enemies of the nation or the class . . . and to sing the praises of murder and madness. (Girard 1987, 287)

This quote occurs in the context of a conversation about the theories and movements spawned by Marx, Nietzsche, Freud, and even Foucault, all of which might be characterized as enthusiasms for which Girard has limited sympathy. Although they all share his willingness to acknowledge the role of violence, they also share the conviction that with the right approach (communist revolution, the triumph of the *übermensch*, universal psychoanalysis, or the overthrow of illegitimate power), violence can be controlled and overcome.

This resembles what I have called the Tinker Theory (Konner 2002): Human life is terribly flawed, but if we tinker with the class structure, the unconscious, or the reins of power, we will transcend and even eliminate the flaws. Girard considers this kind of thinking naive and potentially dangerous. In reality, none of these approaches has succeeded in its goals, and in some cases the results have been horrifically destructive. Girard (rightly in my view) takes these failures as evidence that violence is, and will likely remain, central to human experience.

In fairness to Freud, some of his later writings—*Civilization and Its Discontents*, for example—seem close to Girard's in their acceptance of the ultimate tension between aggressive or "death" instincts and the cooperation needed for civilized life. But in his famous exchange of letters with Albert Einstein in 1932, it was Freud who played the optimist. The physicist began by bemoaning human susceptibility to propaganda leading to war: "How is it that these devices succeed so well in rousing men to such wild enthusiasm, even to sacrifice their lives? Only one answer is possible. Because man has within him a lust for hatred and destruction. In normal times this passion exists in a latent state, it emerges only in unusual circumstances, but it is a comparatively easy task to call it into play and raise it to the power of a collective psychosis" (Einstein [1932] 1963). This is a great oversimplification, since the posited "lust for hatred and destruction" exists only under certain circumstances. A more general and easily evoked human emotional state is the anger that arises in response to frustration, fear, and grief. Combined with an easy slide into dichotomous thought that may lead to pseudo-speciation, the outcome can be ethnic violence, including war or genocide. Freud wrote of

his entire agreement regarding the lust for destruction, but they differed on a crucial point: For Freud, “whatever fosters the growth of culture works at the same time against war” (Freud 1932, 287). Einstein doubted the civilizing power of culture, and to the world’s great sorrow, he proved the more prescient thinker. Girard appears to be closer to Einstein, but for subtler reasons.

Girard has made at least two major contributions to our discourse about violence. One is the concept of mimetic rivalry, according to which angry and competing individuals or groups in confrontation inevitably mimic one another, and in so doing escalate their rivalry into ever-greater risk of ever-greater violence. The other is the thesis of sacrificial violence, which holds that ritual sacrifice is a way of deflecting mimetic rivalry and exporting it from the community, defusing the process that otherwise results in what Hobbes called “the war of all against all.” Whether impassioned and Dionysian, as in Euripides’s *The Bacchae*, or controlled by the strictest ritual, as in the priestly sacrifices in the Israelite temple, the result is similar: the blood shed is that of a designated victim, and it is sacred because it prevents us from shedding one another’s.

And woe to the social world if it does not. Then, to paraphrase Mark Antony in *Julius Caesar*, you “let slip the dogs of war,” and the foul deed of a sacrifice not agreed upon “cries above the earth with carrion men groaning for burial.” Thus, too, do the Montagues and Capulets, “both alike in dignity,” destroy each other piecemeal through interminable vendetta. Not even the accidental sacrifice of poor, good, funny Mercutio, the would-be peacemaker, deflects the violence; it goes on until the (also unintended) sacrifice of what each house loves most brings both down to indignity in a common plague of ultimate loss; “*all* are punished.”

Much earlier in the history of tragic drama, the mimetic rivalry of Eteocles and Polyneices, two sons of Oedipus, annihilates his house as they tear Thebes apart and kill each other. Then, when the one is buried with honor and the other left to rot, Antigone too must die, sealed up in the earth, for the sisterly crime of burying Polyneices. And with her she brings down the whole house of the man who condemns her.

Surely, we think, if a ritual sacrifice could avert such endless mirroring of death breeding death, it would be a gift of the gods. But the role of sacrifice is not always preventive; one-sided sacrifices can speed wars. Because in truth, “the face that launched a thousand ships and burnt the topless towers

of Ilium”—and in the end toppled too the House of Atreus—was not that of Helen, but of Iphigenia, ritually slaughtered by her father Agamemnon, at Aulis, for the sake of wind.

Here we are closer to the dawn of civilization, but we are not there yet. Marx and Engels say in *The Communist Manifesto* that capitalism arose from the mud with blood oozing from every pore. This may or may not be metaphorically true of capitalism, but it is almost literally true of what we call civilization, which emerged from the mud of irrigated fertile land acquired and then protected by much slaughter.

Joining organized violence to religious zeal, early civilizations from the Yangtze to the Yucatan conquered and pacified large numbers of people who, through taxation and military service, provided resources for further expansion. Clashes with other, similar entities were frequent and inevitable. This dynamic has changed little in the thousands of years leading up to the modern age. We think we control the process, but human nature and human biology loom very large in the risk of ethnic violence and war.

In simpler ecological settings like that of the Nuer, a Nilotic people of southern Sudan, warlike tribal groups were able to form hierarchies of alliances and operate as organizations for predatory expansion. And in yet simpler and more static settings, people like the Dani and Enga of highland New Guinea and the Yanomamö of highland Venezuela sustain blood feuds and ritualized war over generations. Perhaps, as Girard suggests, the Kaingang of Brazil represent a degenerate form of this type of conflict, having slaughtered each other almost to extinction.

And yet it is possible to reach deeper, into the process of hominization, to find the origins of the violence at the heart of human life. Perhaps, in some ways, we transcended that background as we became human; perhaps ritual sacrifices enabled us to do this. But in other ways we are all too similar to our pre-hominid ancestors for whom violence may have bred violence in an unending, bloody mimetic cycle.

Conclusion

Girard's two concepts of mimetic rivalry and sacred blood spilled in sacrifice, so useful in literary and ethnographic analysis, also rest upon scientific

evidence that gives bloodshed a central role in human experience. Nonhuman groups, especially those of chimpanzees, show that an elementary form of human ambush-raiding is present among them: periodically a group of males gangs up on and kills a helpless and hapless victim. Many cultures carry out violent raids with or without a ritual dimension; Ilongot headhunting and highland New Guinea raiding parties, in which multiple males ambush and crush a single victim, are two examples. In our own time, both terrorist attacks on civilians and drone strikes on suspected terrorists without due process (and their attendant civilian casualties) constitute the functional equivalent of ambush raids. Of course, as we went through the process of hominization, language, religion, and ritual made something different out of what may have been blind killing by our chimplike ancestors. But in humans too, males predominate, emotional contagion is important, and both group context and leaders facilitate bloodshed. This can at times be directed at in-group members, who cease to be protected when they are split off from all that is human. In other words, there may be a continuum from chimpanzee ambush-raiding, to human ambush-raiding, to headhunting, to ritual sacrifice, to witch hunts and lynch mobs, and finally to genocide.

However, if the enemy is not isolated and weak, but well organized and strong, and you attack him, you have the peculiarly human outcomes of pitched battle and even all-out war. Mimetic rivalry manifests itself fully, as mutual fear and contempt are increasingly justified by real changes on the ground. In a battle, two mobs mirror each other's emotional contagion, and if their leaders compel or inspire obedience, mass mutual slaughter may ensue, sometimes over generations. Religious, ethnic, and national loyalties and passions justify both sides, and with every death—every sacrifice—the cause becomes more sacred to one side or the other. Aggression is involved, but so are fear, contempt, dichotomization, emotional contagion, obedience, and the flight to the protector.

The reciprocal violence of equals may finally engender a sacrificial crisis. The twins Polyneices and Eteocles kill one another, accomplishing nothing, but soon their armies must carry out protracted mimetic slaughter. "Once violence has penetrated a community it engages in an orgy of self-propagation. There appears to be no way of bringing the reprisals to a halt before the community has been annihilated. If there are really such events as sacrificial crises, some sort of braking mechanism, an automatic control that goes into

effect before everything is destroyed must be built into them. In the final stages of a sacrificial crisis the very viability of human society is put in question” (Girard 1977, 67).

And yet, Girard argues, such motives are subject to more severe and thorough repression in modern times than are the sexual motives that obsessed Sigmund Freud. There are thousands of competent behavioral and social scientists today, but only a few, mostly cited here, have grappled seriously with violence; yet the threat of violence dominates our lives as a species, and we cannot address it by escaping. In the final lines of *Violence and the Sacred*, Girard sees a coming sacrificial crisis:

We have managed to extricate ourselves from the sacred somewhat more successfully than other societies have done, to the point of losing all memory of generative violence, but we are now about to rediscover it. The essential violence returns to us in a spectacular manner—not only in the form of a violent history but in the form of subversive knowledge. This crisis invites us, for the very first time . . . to expose to the light of reason, the role played by violence in human society. (Girard 1977, 318)

Or as Simone Weil put it in her great book *The Iliad, or the Poem of Force*: “I believe that the concept of force must be made central in any attempt to think clearly about human relations” (Weil 2006). This imperative has not been heeded by many social scientists, but the Darwinian worldview, deepened by the philosophic and literary insights of Girard, Weil, and others, urges us to stop turning away.

Note

1. A more extended discussion is available in Konner 2006b.

Works Cited

- Asch, S. E. 1951. “Effects of Group Pressure upon the Modification and Distortion of Judgments.” In *Groups, Leadership, and Men*, ed. H. Guetzkow, 177–90. Pittsburgh: Carnegie Press.
- Bohannon, P., and American Museum of Natural History. 1967. *Law and Warfare: Studies in the Anthropology of Conflict*. Garden City, NY: Natural History Press.
- Bowlby, J. 1969–77. *Attachment and Loss*. 3 vols. London: Hogarth Press.

- Bowles, S. 2009. "Did Warfare among Ancestral Hunter-Gatherers Affect the Evolution of Human Social Behaviors?" *Science* 324, no. 5932: 1293–98.
- Bowles, S., and H. Gintis. 2011. *The Cooperative Species: Human Reciprocity and Its Evolution*. Princeton, NJ: Princeton University Press.
- Burkert, W., J. Z. Smith, et al. 1987. *Violent Origins*. Stanford, CA: Stanford University Press.
- Chagnon, N. A. 1968. *Yanomamo: The Fierce People*. New York: Holt, Rinehart and Winston.
- . 1988. "Life Histories, Blood Revenge, and Warfare in a Tribal Population." *Science* 239: 985–92.
- . 1992. *Yanomamö: The Last Days of Eden*. San Diego: Harcourt Brace & Co.
- Cook, M. 2003. *A Brief History of the Human Race*. London: Granta.
- Culotta, E. 1999. "Neanderthals Were Cannibals, Bones Show." *Science* 286: 18–19.
- Darwin, C. 1864. *On the Origins of Species by Means of Natural Selection: Or the Preservation of Favoured Races in the Struggle for Life*. New York: D. Appleton and Co.
- Darwin, F., ed. 1901 *The Life and Letters of Charles Darwin*. Vol. 2. New York: Appleton.
- Defleur, A., T. White, et al. 1999. "Neanderthal Cannibalism at Moula-Guercy, Ardache, France." *Science* 286: 128–31.
- DeGusta, D. 1999. "Fijian Cannibalism: Evidence from Navatu." *American Journal of Physical Anthropology* 110 (October): 215–41.
- Dentan, R. K. 1968. *The Semai: A Nonviolent People of Malaysia*. New York: Holt, Rinehart and Winston.
- DeVore, I. 1965. "Male Dominance and Mating Behavior in Baboons." In *Sexual Behavior*, ed. F. Beach. New York: John Wiley.
- Divale, W. T. 1974. "Migration, External Warfare, and Matrilocal Residence." *Behavioral Science Research* 9: 75–133.
- Douglas, M. 1966. *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*. New York: Praeger.
- Earle, T., ed. 1991. *Chiefdoms: Power, Economy, and Ideology*. Cambridge: Cambridge University Press.
- Edgerton, R. B. 1992. *Sick Societies: Challenging the Myth of Primitive Harmony*. New York: Free Press.
- Eibl-Eibesfeldt, I. 1979. *The Biology of Peace and War: Men, Animals, and Aggression*. London: Thames and Hudson.
- Einstein, A. [1932] 1963. "Why War? Letter to Sigmund Freud." In *Einstein on Peace*, ed. O. Nathan and H. Nordan. London: Methuen.
- Ember, C. R. 1978. "Myths about Hunter-Gatherers." *Ethnology* 17, no. 4: 439–48.
- Ember, M., and C. R. Ember. 1971. "The Conditions Favoring Matrilocal versus Patrilocal Residence." *American Anthropologist* 73: 571–94.
- . 1994. "Prescriptions for Peace: Policy Implications of Cross-cultural Research on War and Interpersonal Violence." *Cross-Cultural Research* 28, no. 4: 343–50.
- Festinger, L. 1957. *A Theory of Cognitive Dissonance*. Evanston, IL: Row, Peterson.

- Freud, S. 1932. "Why War? Letter to Albert Einstein." In *Standard Edition of the Complete Psychological Works of Sigmund Freud*, ed. J. Strachey. London: Hogarth.
- . [1922] 1949. *Group Psychology and the Analysis of the Ego*. London: Hogarth Press.
- Fromm, E. 1994. *Escape from Freedom*. New York: H. Holt.
- Gibbons, A. 2004. "Chimpanzee Gang Warfare." *Science* 304: 818–19.
- Girard, R. 1977. *Violence and the Sacred*. Baltimore: Johns Hopkins University Press.
- . 1987. *Things Hidden since the Foundation of the World*. Stanford, CA: Stanford University Press.
- Goodall, J. 1977. "Infant Killing and Cannibalism in Free-living Chimpanzees." *Folia Primatologica* 28: 259–82.
- . 1986. *The Chimpanzees of Gombe: Patterns of Behavior*. Cambridge, MA: Harvard University Press.
- Goodall, J. v. L. 1979. "Life and Death at Gombe." *National Geographic Magazine* 155: 592–621.
- Hatfield, E., J. T. Cacioppo, et al. 1994. *Emotional Contagion*. Cambridge: Cambridge University Press.
- Hausfater, G. 1975. *Dominance and Reproduction in Baboons (Papio cynocephalus)*. Basel: Karger.
- Hausfater, G., and S. B. Hrdy, eds. 1984. *Infanticide: Comparative and Evolutionary Perspectives*. New York: Aldine de Gruyter.
- Hrdy, S. B. 1977. *The Langurs of Abu: Female and Male Strategies of Reproduction*. Cambridge, MA: Harvard University Press.
- . 1979. "Infanticide among Animals: A Review, Classification, and Examination of the Implications for the Reproductive Strategies of Females." *Ethology and Sociobiology* 1: 13–40.
- Jakobson, R., and M. Halle. 1971. *Fundamentals of Language*. The Hague: Mouton & Co.
- Kano, T. 1992. *The Last Ape: Pygmy Chimpanzee Behavior and Ecology*. Stanford, CA: Stanford University Press.
- Keegan, J. 1993. *A History of Warfare*. New York: Vintage Books.
- Keeley, L. H. 1996. *War before Civilization: The Myth of the Peaceful Savage*. New York: Oxford University Press.
- Kelly, R. C. 1985. *The Nuer Conquest: The Structure and Development of an Expansionist System*. Ann Arbor: University of Michigan Press.
- Knauff, B. 1987. "Reconsidering Violence in Simple Human Societies: Homicide among the Gebusi of New Guinea." *Current Anthropology* 28: 457–500.
- Konner, M. 2006a. "Human Nature, Ethnic Violence, and War." In *The Psychology of Resolving Global Conflicts: From War to Peace*, vol. 1, ed. M. Fitzduff and C. E. Stout. Westport, CT: Praeger Security International.
- , ed. 2006b. *Human Nature, Ethnic Violence, and War*. Westport, CT: Praeger Security International.
- Konner, M. J. 2002. *The Tangled Wing: Biological Constraints on the Human Spirit*. Rev. ed. New York: Holt/Times Books.

- LeBlanc, S., and K. E. Register. 2003. *Constant Battles: The Myth of the Peaceful, Noble Savage*. New York: St. Martin's Press.
- Lee, R. B. 1979. *The !Kung San: Men, Women and Work in a Foraging Society*. Cambridge: Cambridge University Press.
- Lévi-Strauss, C. 1968. *The Savage Mind*. Chicago: University of Chicago Press.
- Lewis, M., and L. Rosenblum. 1973. *The Origins of Fear*. New York: Wiley.
- Lorenz, K. 1970. "What Aggression Is Good For." In *Animal Aggression: Selected Readings*, ed. C. H. Southwick. New York: Van Nostrand Reinhold.
- Mackay, C. 1932. *Extraordinary Popular Delusions and the Madness of Crowds*. New York: Noonday Press.
- Manson, J. H., and R. W. Wrangham. 1991. "Intergroup Aggression in Chimpanzees and Humans." *Current Anthropology* 32, no. 4 (August-October): 369–90.
- Marshall, L. 1976. "Sharing, Talking, and Giving: Relief of Social Tensions among the !Kung." In *Kalabari Hunter-Gatherers: Studies of the !Kung San and Their Neighbors*, ed. R. B. Lee and I. DeVore, 349–71. Cambridge, MA: Harvard University Press.
- Maybury-Lewis, D., and U. Almagor. 1989. *The Attraction of Opposites: Thought and Society in the Dualistic Mode*. Ann Arbor: University of Michigan Press.
- Meggitt, M. J. 1977. *Blood Is Their Argument: Warfare among the Mae Enga Tribesmen of the New Guinea Highlands*. Palo Alto, CA: Mayfield Publishing Co.
- Milgram, S. 1963. "Behavioral Study of Obedience." *Journal of Abnormal and Social Psychology* 67: 371–78.
- . 1974. *Obedience to Authority: An Experimental View*. London: Tavistock.
- Niehoff, D. 1999. *The Biology of Violence: How Understanding the Brain, Behavior, and Environment Can Break the Vicious Cycle of Aggression*. New York: Free Press.
- Otterbein, K. F. 1970. *The Evolution of War: A Cross-cultural Study*. New Haven, CT: Human Relations Area Files Press.
- Pinker, S. 2011. *The Better Angels of Our Nature: Why Violence Has Declined*. New York: Viking.
- Robinson, P., and H. Tajfel, eds. 1997. *Social Groups and Identities: Developing the Legacy of Henri Tajfel*. International Series in Social Psychology. London: Butterworth-Heinemann.
- Rosaldo, R. 1980. *Ilongot Headhunting, 1883–1974: A Study in Society and History*. Stanford, CA: Stanford University Press.
- Sageman, M. 2008. *Leaderless Jihad: Terror Networks in the Twenty-first Century*. Philadelphia: University of Pennsylvania Press.
- Sahlins, M. D. 1961. "The Segmentary Lineage: An Organization of Predatory Expansion." *American Anthropologist* 63: 322–45.
- Sanday, P. R. 1986. *Divine Hunger: Cannibalism as a Cultural System*. Cambridge: Cambridge University Press.
- Schmookler, A. B. 1983. *The Parable of the Tribes: The Problem of Power in Social Evolution*. Berkeley: University of California Press.
- Sherif, M., O. J. Harvey, et al. 1961. *Intergroup Conflict and Cooperation: The Robbers Cave Experiment*. Norman, OK: Institute of Group Relations.

- Shostak, M. 1981. *Nisa: The Life and Words of a !Kung Woman*. Cambridge, MA: Harvard University Press.
- . 2000. *Return to Nisa*. Cambridge, MA: Harvard University Press.
- Smuts, B. 1992. "Male Aggression against Women: An Evolutionary Perspective." *Human Nature* 3, no. 1: 1–44.
- Smuts, B. B., and R. W. Smuts. 1993. "Male Aggression and Sexual Coercion of Females in Nonhuman Primates and Other Mammals: Evidence and Theoretical Implications." *Advances in the Study of Behavior* 22: 1–63.
- Tajfel, H. 1982. *Social Identity and Intergroup Relations*. Cambridge: Cambridge University Press.
- Thomas, E. M. 1959. *The Harmless People*. New York: Vintage Books.
- Tiger, L. 1969. *Men in Groups*. New York: Random House.
- Toynbee, A. 1972. *A Study of History*. New York: Oxford University Press.
- Trinkhaus, E. 1978. "Hard Times among the Neanderthals." *Natural History* 87: 58–63.
- . 1995. *The Shanidar Neandertals*. New York: Academic Press.
- Trinkhaus, E., and W. W. Howells. 1979. "The Neanderthals." *Scientific American* 241, no. 6: 118–33.
- Ursin, H., and B. R. Kaada. 1960. "Functional Localization with the Amygdaloid Complex in the Cat." *Electroencephalography and Clinical Neurology* 12: 1–20.
- Villa, P., et al. 1986. "Cannibalism in the Neolithic." *Science* 233: 431–37.
- Wade, N. 2000. "If You Are What You Eat, Mind if I Move to Another Table? Reconsidering Cannibalism." *New York Times*, January 2, sec. 4, p. 3.
- Wallen, K., and P. L. Tannenbaum. 1997. "Hormonal Modulation of Sexual Behavior and Affiliation in Rhesus Monkeys." *Annals of the New York Academy of Sciences* 807: 185–202.
- Weil, S. 2006. *The Iliad, or, the Poem of Force: A Critical Edition*. New York: Peter Lang Publishing.
- White, T. D. 1992. *Prehistoric Cannibalism at Mancos 5MTumr-2346*. Princeton, NJ: Princeton University Press.
- Whiting, J.W.M., and B. B. Whiting. 1975. "Aloofness and Intimacy between Husbands and Wives." *Ethos* 3: 183–207.
- Wiessner, P., and N. Pupu. 2012. "Toward Peace: Foreign Arms and Indigenous Institutions in a Papua New Guinea Society." *Science* 337, no. 6102: 1651–54.
- Wilson, E. O. 1975. *Sociobiology: The New Synthesis*. Cambridge, MA: Harvard University Press.
- Wrangham, R. W., and D. Peterson. 1996. *Demonic Males: Apes and the Origins of Human Violence*. Boston: Houghton Mifflin.
- Wynne-Edwards, V. C. 1962. *Animal Dispersion in Relation to Social Behaviour*. New York: Hafner Publishing Co.