

TOPIC STATEMENT TWO: ANTHROPOLOGY OF VIOLENCE

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INTRODUCTION

This topic statement begins with an overview of aggressive behavior in animals, moves to intra-group aggression in chimpanzees, then describes violence and warfare in human societies, and concludes by applying evolutionary theory to suicide terrorism.

ANIMAL VIOLENCE

Many animals possess the capacity to act violently in the face of certain ecological and social conditions. That said, there is considerable variation in violent behavior within the animal kingdom, even between closely-related species. Our closest living relatives, bonobo chimpanzees (*Pan paniscus*), for example, are relatively non-violent compared to their close kin, the common chimpanzee (*Pan troglodytes*).

Even within a single species, violent and non-violent strategies may successfully coexist. Sexually mature male orangutans (*Pongo pygmaeus*) demonstrate this point. Mature male orangutans have two distinct morphs; the “standard” flanged one and the unflanged, “Peter Pan” morph (Galdikas 1985, Schurmann 1985). Flanged males are aggressive toward one another, yet females prefer them to Peter Pan males. Peter Pan males avoid confrontation with other males, but must force copulation upon females. Each strategy can produce offspring, but they carry different costs - intrasexual aggression for flanged males, and a reliance on forced copulation for Peter Pans.

Animals act aggressively for many reasons. They may be aggressive to protect themselves, their offspring, or some resource. They may also act offensively in order to

acquire mates or other resources (Archer 1988). Whether or not to act violently depends largely on local circumstances - even animals considered passive may lash out to defend themselves or their offspring.

Natural selection has favored aggression *between* species for straightforward reasons. Predatory animals must be aggressive in order to eat. Likewise, their prey may be aggressive to avoid being eaten (although there are, of course, other defensive strategies like poison and stealth). Much of the violence we see *within* species may be attributable to competition over mates. As Trivers (1972) showed, when one sex invests in offspring more than the other, we should expect to see competition for this investment. In accordance with this logic, male mammals compete to acquire and protect mates or mating opportunities. What's more, when a population has a high number of reproductively-aged males compared to reproductively-aged females, male-male competition should increase (Emlin and Oring 1977). While such competition need not always be violent, it is reasonable to say that for mammals it often is.

Influential as they have been, the classic papers above are not the final word on the subject of parental investment or intrasexual competition. Behavioral science is complicated, and this issue is no exception. Several recent papers by Kokko and colleagues reexamine Trivers' work (*e.g.* Kokko *et al.* 2008), and draw attention to the fact that just because females invest more pre-partum, they may not *necessarily* have to invest more after giving birth (*e.g.* Kokko 2008). I give more time to this in *Topic Statement IV: Family Dynamics*, yet it bears mentioning here that the differences in male and female parental investment and intrasexual competition may have more to do with the fact that males can earn relatively high reproductive rewards by following strategies that rely on

competition with peers and pursuing mating opportunities rather than investing in offspring *if male mating success is non-random* (Kokko *et al.* 2008). Given individual differences in physical size and ability, social tact, and so on, the assumption that mating success is non-random is reasonable for primates. For many species, violence is a means to acquire and defend social status. Chimpanzee social structure, for example, is arranged according to a dominance hierarchy. Males at the top of this hierarchy, who have great social prowess, have higher reproductive success than lower-ranked males (Boesch *et al.* 2006). For this reason, it makes adaptive sense for them to fight to defend their place in the hierarchy. When lower-ranked males challenge higher-ranked ones, the outcome is “universally” violence because high-ranking chimps have much to lose and low-ranking ones have much to gain in such a situation (Wrangham and Wilson 2004). The importance of status is not lost on female chimpanzees. Like males, high-ranked females have greater reproductive success than low-ranked ones, likely because they are better able to establish and keep better foraging areas (Pusey, Williams, and Goodall 1997). A recent study details infanticide by female chimpanzees at the Sonso, Uganda community, which the authors attribute to a recent influx of female immigrants who have skewed the sex ratio to nearly 1:3 and intensified competition for resources (Townsend *et al.* 2007).

Chimpanzees are also aggressive toward members of other troops. Chimpanzees form coalitionary groups which actively patrol their home range for intruders (Wrangham 1999). They share this behavior with spotted hyenas, wolves, cheetahs, lions, and humans (Watts and Mitani 2001). Such coalitionary inter-group violence is widespread and “typical” of wild chimpanzee populations (Kelly 2000, Kelly 2005, Wrangham 1999,

Wrangham and Wilson 2004) and is intended to actively suppress threats to troop member's reproductive and nutritional interests. Violence is often the outcome if a group of patrolling chimpanzees happens upon a member of a neighboring group. They may beat or kill the intruder if the circumstances are right. For this to happen, they generally must outnumber the other chimpanzee(s) by a three-to-one ratio, which virtually ensures victory (Wrangham 1999). Wilson and Wrangham (2003) developed the "Imbalance of Power Hypothesis" (IPH) to expound on this and other aspects of chimpanzee violence. The IPH is two-pronged - it addresses both the short and long-term rationale for chimpanzee violence. Because violence is risky behavior for chimpanzees, they will generally go on the offensive only after "sizing up" their opponents (Wilson and Wrangham 2003, Wrangham 1999). When there is a sufficient asymmetry of power between the potential attackers and the victim, generally three to one, an attack becomes likely. Regarding the long-term utility of these attacks, Wilson and Wrangham (2003) propose several explanations. The attacks allow males to 1) defend the females in their own group from outside males, 2) gain females from rival groups by expanding their own territory, 3) kill rival males, 4) "recruit" female from rival groups through infanticide, 5) defend feeding territory, and 6) fight for status among themselves. These explanations show how acts of chimpanzee violence are adaptive for individuals, rather than "for the good of the group" or the resultant byproduct of "unnatural" outside influences.

Humans share a capacity for violence with chimpanzees and many other mammals. This suggests violence is phylogenetically old (Huntingford and Turner 1987). It should not be surprising then that direct comparisons have been drawn between violence behavior in humans and other great apes. Wrangham and Wilson (2004), for example,

noted that street gangs are largely comprised of young males and that they also share several organizational and behavioral characteristics with chimpanzee troops. In both, 1) young adult males are the primary participants in violence, 2) territorial borders and mass confrontations are avoided, 3) “hits” occur outside the home range, 4) males begin challenging older males for status at adolescence, and 5) males develop networks of allies at adolescence (Wrangham and Wilson 2004). In street gangs and chimpanzee troops, social status is critical to success, and it is often earned only through violence directed at higher-ranked members of one’s own group or members of other groups (Wrangham and Wilson 2004). Wilson and Wrangham’s provocative work illustrates several behavioral similarities between humans and chimpanzees regarding coalitionary violence.

PRIMITIVE WARFARE

Many tools are dual-use, serving both as hunting implements and weapons. This muddies the waters for those who study the history of human violence. Some take the position that warfare is a recent phenomenon, while others propose it has always been with us. This argument dates to Hobbes and Rousseau, but we are learning more about early forms of violence as the archeological record becomes more complete. Evidence of head trauma and points embedded in human bones, suggests interpersonal violence has occurred between humans for at least 40,000 years (Keeley 1996). Previously, many of these injuries were attributed to accidents, but modern forensic techniques rule this out. If technology itself is a representation of interpersonal violence, we can safely assume such violence is hundreds of thousands, if not millions of years old. A group of 400,000 year old wooden spears unearthed in Germany may be one of the best examples we have of

early fighting technology. The spears were likely used for hunting, but there is no reason to expect that they were not also used as weapons (Thieme 1997).

Of course, the documentation of coalitionary killing in chimpanzees also suggests deliberate interpersonal violence is a very old behavior. In a recent article, Carrier (2007) proposed that *Australopithecus* witnessed high levels of male-male violence based on the fact that they have relatively short legs, which would have aided in fighting. There is also good evidence for interpersonal aggression in Neanderthals, namely a 36,000 year old skeleton, “St. Cesaire 1,” which bears a cranial injury consistent with a blow from a weapon (Thieme 1997).

Just over 90 percent of human societies participate in warfare, and the existence of warfare has been explained in many ways (Keeley 1996). Until the 1970’s these explanations were generally proximate and materialistic (although not necessarily incorrect). Of these, the Yanomamö “Protein Debate” is perhaps best known. At the center of the debate was a group of researchers, notably Marvin Harris, who hypothesized that the high rate of violence among the Yanomamö was caused by competition over protein, which they said was the limiting nutritional resource in the Yanomamö diet (Chagnon 1997, Harris 1974). On the other side of the debate were those who said Yanomamö violence was ultimately about competition for access to women. The latter view was held by the Yanomamö themselves, one of whom is quoted by Chagnon (1997) as saying, “Even though we do like meat, we like women a whole lot more!” The debate ended when Chagnon showed the typical Yanomamö male eats “the [protein] equivalent of one Big Mac per day,” which is sufficient for people their size (Chagnon 1997). Since the “Protein Debate” of the 1970’s and 80’s, much has been learned about the causes of war-

fare. What seems clear is that we must examine it holistically if we are to have any chance at quelling it. In primitive warfare, the victor often gains territory, women, and other such things (Keeley 1996). These proximate, material, benefits of war can, in turn, increase reproductive success.

This brings up the point of collective action problems in human warfare. Why should I fight if someone else can do it for me? Again, the Yanomamö provide a good example of the benefits individuals reap through warfare. The collective action problems inherent in-group violence can be overcome by selective incentives like reproductive opportunities and higher status. Chagnon (1988) showed that better Yanomamö warriors have higher reproductive success than average. Furthermore, village headmen are more likely to have killed than average group members (Chagnon 1988). Even in the West, military jobs provide high prestige relative to what they pay (University of Chicago 2007). A recent article by Beckerman *et al.* (2009) suggests using violence as a tactic to gain social status and reproductive opportunities works only up to a certain point, however. For the Amazonian group they studied, the Waorani of Ecuador, there exists a negative relationship between bellicosity and the number of surviving children, total children, and number of wives men have over a lifetime. The difference in reproductive success for Yanomamö and Waorani warriors is apparently rooted in their differing styles of warfare. Yanomamö violence is cyclical, so men often have a generation or so to recoup social rewards from their success in raids. Waorani violence, on the other hand, is nearly continuous, leaving men little or no time to reproductively recoup. Also, Yanomamö men commonly steal women when raiding, while the Waorani are instead much more likely to kill them. The Yanomamö strategy of taking women in raids gives participating men the reproduc-

tive upper hand compared to non-participants. This is not the case for the Waorani, who seem to be the exception rather than the rule when it comes to rewarding valor in conflict.

TERRORISM AS A STRATEGY AND TACTIC

Terrorism, defined by the US Department of State as “premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents, usually intended to influence an audience,” is used in warfare because it is efficient and produces results (Pape 2005). The human and monetary costs of terrorism are relatively low for those groups who employ it, given they would be incapable of organizing and funding warfare by traditional means against superpowers like the US. Terrorist tactics level the playing fields of asymmetrical conflicts where one group lacks the financial or technological expertise to win by conventional means (Pape 2003, Pape 2005). To achieve their goals, modern terrorist organizations employ a variety of strategies. They kidnap people, hijack airplanes, busses, or trains, and render useless anything of strategic value to the opposition. This strategy is not new. Guerilla fighters are often called “terrorists” by opposing forces. Revolutions, including the American and French, have often employed “terrorist” tactics. Time and again, where one side has been literally outnumbered and outgunned, the less-powerful side has turned to guerilla warfare or terrorism.

Suicide attacks are an increasingly common tactic in guerilla warfare. Although the modern era of suicide terrorism was ushered in with spectacular waves of bombings in the 1980’s, the phenomenon is not entirely new. Circa 1000 AD, Norse soldiers known as “Berserkers” rushed to battle with little or no armor. They were extremely mobile, effective, soldiers, but they were nearly certain to die in the midst of their pursuits.

The 11th century Muslim “Assassins” worked by gaining the trust of political officials and lying in wait, sometimes for years, to kill them. The cost of this was near-certain death, which was viewed as martyrdom by the Assassins themselves. The widespread use of suicide attacks seems to have disappeared for nearly 1000 years, only reemerging in World War II when 3,843 Japanese Kamikaze pilots flew to their deaths. The 1983 bombing of the U.S. military barracks in Lebanon ushered in the modern age of suicide terrorism (Pape 2005). Unfortunately, its use trended steadily upward since the 1980’s until very recently, and has been most used by Iraqi insurgents, the Tamil Tigers (LTTE) of Sri Lanka, and the Kurdistan Workers Party (PKK) of Turkey.

Not all terrorist campaigns have the same specific goals in mind, but they generally seek the expulsion of “foreign” troops from areas they believe they have the right to (Pape 2005). For example, Al-Qaeda has repeatedly stated its wish to rid the Middle East, especially Saudi Arabia, of Westerners and Western influence (Bin Laden 1996). The Kurdistan Workers Party seeks the establishment of an independent Kurdish state in Turkey, and the Tamil Tigers sought an independent Tamil state in the northeastern part of Sri Lanka.

Suicide attacks are an integral part of many, but not all, modern terrorist campaigns. From a strategic standpoint, there is a rational explanation for using suicide terrorism - it works better than conventional means, either diplomatic or violent, to influence outcomes (Pape 2005). Al-Qaeda, Hamas, Islamic Jihad, the Kurdistan Workers Party, and the Tamil Tigers have successfully used suicide terrorism to achieve their primary strategic goals. Of the 315 suicide bombings worldwide from 1980 through 2003, Pape (2005) found that the strategic goals of the terrorist groups were achieved 50% of

the time. Such a high level of success would be unlikely for these groups through conventional means.

But there are many examples where foreign troops occupy sacred soil and suicide terrorism does not emerge. The Irish Republican Army (IRA), for one, has never employed suicide terrorism, even though the group clearly has killed many innocent people to accomplish its goals. This is most likely because there is not societal support for suicide terrorism in Northern Ireland. For Catholics, suicide is a mortal sin under any circumstances and the community would find such a tactic reprehensible. Furthermore, Catholicism is a hierarchical religion, where religious rulings are issued by the Pope and the Pope only. Islam, on the other hand, permits many people to issue religious rulings. These religious decisions may conflict, but followers can choose those that best suit their needs. This does not necessarily mean that religion is the root cause of suicide terrorism, many non-religious groups employ it, but it does suggest that certain religious or societal conceptions can encourage or impede its use.

In summary, suicide terrorism arises where there are large power asymmetries, societal support, and foreign troops occupying “sacred” soil. I turn now to what motivates individuals to become suicide attackers.

WHO ARE SUICIDE BOMBERS?

A high rate of success may explain suicide terrorism from a strategic or tactical standpoint, but what of the individual logic of suicide terrorism? From an evolutionary perspective, suicide seems incredibly irrational. The very cost of succeeding in the action ensures the perpetrator will not be alive to enjoy the benefits directly. The remainder of

this topic statement focuses on the individual logic of suicide terrorism.

Politicians often portray suicide terrorists as psychopaths who lack control over their actions. This idea is a poor reflection of the truth and perpetuates the notion that suicide terrorists are somehow unstoppable in their quest to blow themselves and others up. It does, however, bolster the political argument that we must fight terrorists abroad so we do not have to fight them on American soil. The policy maker's portrayal of suicide terrorists as poor, uneducated, religious fanatics with mental disorders is hardly supported by the data. Suicide terrorists are not uneducated or insane. They are often not even religious. The Tamil Tigers are the most prolific perpetrators of suicide terrorism in the world, yet they subscribe to a secular-Marxist ideology that is markedly anti-religious (Atran 2003, Pape 2005). The Tamil Tigers show that religious ideology alone is not sufficient to explain suicide terrorism.

Al-Qaeda suicide bombers generally have college degrees and come from relatively high-status and economically well-to-do families, and a surprising number hold graduate degrees (Atran 2003). Attaining a graduate degree requires prolonged sacrifice and commitment, but can produce long-lasting rewards. The same pattern of sacrifice and reward is stressed in religiously motivated suicide terrorism. In other words, sacrifice on Earth translates into eternal jubilation after death. Al-Qaeda may actively recruit those with advanced degrees because they are primed for the sacrifice.

Those of us familiar with evolutionary theory might see suicide attacks as the tail end of the distribution of "young male syndrome" seen in young men the world over (Daly and Wilson 1985). In populations with high numbers of reproductively-aged men to women, young men may be competitive to a point where they blow themselves up.

Suicide terrorism is also a form of martyrdom, which raises the social status of the actors. It is possible that there are inclusive fitness benefits the individual, which would be strengthened in populations with highly male-biased sex ratios.

But this explanation cannot account for the sizable number of female suicide attackers. Women comprise the majority (71%) of Kurdistan Workers Party suicide bombers and a sizable minority (20%) of Tamil Tigers suicide bombers. The latter women are known as “Black Tigresses.” Pape (2005) describes the life of one Black Tigress named Dhanu, who, in 1991, killed herself along with Indian Prime Minister Rajiv Gandhi. Pape paints the picture of a woman driven to kill by revenge. Five years before her suicide, Indian soldiers occupying Sri Lanka killed four of her brothers before raping her (Pape 2005). To make matters worse, rape victims are subject to a marriage taboo in Tamil culture, leaving Dhanu with little prospect of leading a typical Tamilese life (Pape 2005). Dhanu may have embraced martyrdom because she was faced with grim marriage and reproductive prospects. Martyrdom, after all, could have provided some social and monetary benefits to her relatives. Perhaps other Black Tigresses were victims of rape and chose the same fate. Interestingly, the majority of Islamic fundamentalist groups, like Al-Qaeda, do not employ female suicide bombers due to religious prohibitions regarding acceptable female behavior. Counterintuitively, Islamic fundamentalism may actually suppress the number of suicide bombings such groups accomplish by limiting the supply of martyrs (Pape 2005).

Suicide terrorism is a public good in the sense that it is not “excludable” or “subtractable” in the sense Ostrom and Ostrom put forward (1977). As a public good, it is susceptible to collective action problems. Why should someone kill themselves when

someone else could take their place? As is the case with coalitionary violence generally, there may be benefits for individuals who participate in suicide terrorism, although they are likely to be less direct. It is also important to question whether the benefits brought by a bomber's death outweigh the benefits he or she could have provided to in life. To answer to this question, we need to look at how social status and inclusive fitness are affected by martyrdom. Little is written about either of these candidates as root causes of suicide terror. Pape (2005) suggests Hamas suicide bombers are generally from "large" families, but provides no quantitative evidence as support. He does, however, describe how suicide bombers are exalted to martyr status. Following a successful suicide attack, Hamas creates a great deal of pomp and circumstance both to remember the bomber and to support his or her family. Photographs of "martyrs" are published in local newspapers, parades are held, and, at times, the family is given a cash payment. The case is much the same for Tamil Black Tigers and Tigresses. In the end, these incentives may be the vector through which suicide terrorists "make the best of a bad job" given what they perceive as poor reproductive, political, and ideological alternatives.

CONCLUSION

Cross-cultural, phylogenetic, and archaeological evidence suggest hominids have participated in interpersonal violence for millions of years, and among extant apes, humans and common chimpanzees participate in coalitionary violence. But there is cross-cultural variation in coalitionary violence, and by studying the ecological pressures that cause it, we may be able to prevent it in some cases. If, for example, a male-biased operational sex ratio is cause for competition and violence in humans, equalizing the ratio should lessen

conflict. Note that this is not a feminist argument couched in the tired assumption that females are coy and passive, but rather it is an economic one that considers the situation in terms of supply and demand. Another way to lessen conflict is to make it socially unacceptable. As the absence of IRA suicide bombers shows, when society considers a tactic reprehensible, it may not be used.

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