Do Yanomamo Killers Have More Kids?

Author(s): R. Brian Ferguson

Source: *American Ethnologist*, Aug., 1989, Vol. 16, No. 3 (Aug., 1989), pp. 564-565

Published by: Wiley on behalf of the American Anthropological Association

Stable URL: http://www.jstor.com/stable/645275

do Yanomamo killers have more kids?

Chagnon (1988) has once again provided us with a provocative report concerning violence among the Yanomamo. Within his study population, men who have killed have an average of three times as many children as men who have not, 4.91 versus 1.59. This purported offspring gap is *news* (Allman 1988; Horgan 1988). Coming as it does in the middle of Chagnon's quest to establish the sociobiology of war, surely this means something portentous. But does it?

Chagnon asserts that there are two kinds of resources people strive for, two kinds of human effort, two kinds of competition: somatic (concerning physical survival), and reproductive. Among the Yanomamo he studied, violence appears to be adaptive on both counts. Somatically, a killer, or *unokai*, and his close kin are less likely to be attacked because of the deterrent effect of the *unokai*'s apparent fierceness. (*Unokai* are men who have undergone a purification ceremony for those responsible for a killing.) Reproductively, *unokai* have more children than non-*unokai* (Chagnon 1988:985). All this is linked to the assertion that Yanomamo wars start over women, but thereafter are driven by revenge (1988:986, 989). The conclusion is that in this kind of political environment taking revenge enhances an individual's inclusive fitness. I will consider these points in reverse order, starting with the idea that warfare is driven and maintained by revenge.

The idea that war is explainable as a sequence of revenge killings runs against the deterrence argument for somatic benefit. A violent attack will make a counter-attack either more likely (revenge) or less likely (deterrence), but it cannot do both at once. To the degree that deterrence is effective, it will act against the institutionalization of a pattern of strike and counter-strike.

In my view (see Ferguson 1984:308, 1988:ii–iii), vengeance is a motivation that is very real, but very malleable. The motive is harnessed in political decisions to retaliate, when retaliation is considered necessary to prevent future attacks. Chagnon's paper (1988:986) illustrates that revenge sometimes is taken, but sometimes is not—in fact the entire deterrence argument is based on the premise that revenge can be discouraged by expectable danger. So revenge raiding is not automatic, it does not drive the system. The decision to retaliate is a tactical one, a part of the process of war, rather than its cause. I will return to revenge killings shortly.

Regarding differential reproductive success, the situation is actually quite murky. Most of the 209 percent gap between average number of offspring for *unokai* and non-*unokai* is due to age: as a young man matures, he is more likely to become *unokai*, and also more likely to have more children. If one looks at the breakdown by age categories (Chagnon 1988:989), the offspring gap shrinks dramatically. For the older categories, which contain 86 percent of all *unokais*, the *unokai* advantage is 40 percent and 67 percent. Furthermore, some of that difference, about one quarter by my estimate, is expectably due to variations associated with age differences *within* the age categories.

Whatever the size of the gap, these data do not establish that becoming *unokai* is itself associated with having more children, for two reasons. First, in the study population, all headmen are *unokai* (Chagnon 1988:988). It is a commonplace in Amazonian ethnography, at least since Lévi-Strauss' (1944) famous article, that headmen have more wives and more children, regardless of the presence or absence of war. The Yanomamo certainly follow this pattern, with one headman reportedly (Chagnon 1988:988) having 43 children by 11 wives. The greater number of offspring associated with headman status thus distorts the advantages attributable to *unokai* status by an unknown amount.

Second, the table on reproductive success presents data only on children whose fathers are/were still alive ("Living children whose fathers are dead . . . are not included in this table" [Chagnon 1988:989]). This raises the question, what is the effect of becoming *unokai* on life chances? Does the average *unokai* live and breed longer than the average non-*unokai*?

This brings us back to Chagnon's deterrent effect, and the posited somatic benefits of revenge taking. Deterrence would seem to indicate that *unokais* live longer. However, even if a killing may be a deterrent in a given situation, it is hard to imagine how acquiring *unokai* status would *not* place an individual in significantly more jeopardy than if he had not killed. Otherwise, what are we to make of statements like: "Yanomamo raiders always hope to dispatch the original killer" (Chagnon 1988:985), "the most common explanation given for raids (warfare) is revenge for a previous killing" (p. 986), or "[especially] high levels of relatedness make it likely that almost every violent death will trigger revenge killing" (p. 989).

It seems highly unlikely that being responsible for a killing does not increase personal risk, especially since there does appear to be an alternative. A substantial part of Chagnon's study population somehow manages to avoid the worst of the violence. "Some men never go on raids" (1988:987), 38 percent of men 41 years old or older never became *unokai*, and 30 percent of people age 40 or older have never lost any "close genetic kin" to violence (p. 989). Considering that some 30 percent of adult male deaths are due to violence (p. 986), and the high degree of relatedness within Yanomamo communities (p. 987), the last fact is surprising and intriguing.

Higher mortality associated with *unokai* status could easily offset a greater number of offspring for living *unokai*. Combine that with the unknown impact of the headman factor, and there is no basis at present to conclude that becoming *unokai* is associated with greater lifetime reproductive success.

As an anti-genetic-determinist, I would welcome documentation of such a relationship. That a greater number of offspring should be linked to being a killer has no inherent connection to a sociobiological form of explanation. After all, the Divale-Harris (1976:526) population regulation model of war asserts that aggressive men will be rewarded with sex. On the other hand, were Chagnon to prove his point, those data would be strong evidence against any genetic control over human aggressive behavior.

If a tendency to take violently aggressive action were under direct genetic control, then differential reproductive success far less than that implied for the Yanomamo would result in observable differences in disposition toward aggression. Certainly such differences would be observable between populations, and perhaps within them as well. But I know of no sociobiologist who has suggested (nonpathological) intraspecific differences in human disposition toward aggression. It is my impression that the idea is unanimously rejected. The absence of such differences, if joined to a demonstration of clear differential reproduction of the more aggressive, would strongly indicate that the disposition toward aggressive behavior is not under significant genetic control.

As a final comment, the theory advocated by Chagnon is unclear, at least to me, about the relationship between behavior and maximizing inclusive fitness. The first part of the theory was noted earlier: all resources, effort, and competition can be split into somatic and reproductive categories. That part is clear, even if I do not understand how or why one would want to divide human existence in this way. But I lose the argument with the next two statements. Chagnon writes:

> I do not assume that humans consciously strive to increase or maximize their inclusive fitness, but I do assume that humans strive for goals that their cultural traditions deem as valued and esteemed. In many societies, achieving cultural success appears to lead to biological (genetic) success [1988:985].

Shortly thereafter, as he begins discussion of the Yanomamo case, he adds: "Although there are customs and general rules about proper behavior, individuals violate them regularly when it seems in their interests to do so" (p. 985).

I am uncertain of the meaning of these two statements taken together, and can see two possible readings or interpretations. In the first interpretation, Chagnon would be saying that when human beings are presented with a choice between being a success within the norms of their own society, or of producing as many offspring (and offspring of close kin) as possible, that people will regularly choose the latter. But that interpretation seems absurd on the face of it.

In the second interpretation, the phrase "in their interests" in the second quotation is taken to refer to somatic interests only, and we know that people will violate norms to stay alive. Thus Chagnon's position on reproductive success would be that individuals do what their culture tells them to do, and culture generally rewards these conformists with reproductive success. That position certainly seems plausible. But if it is intended to explain particular cultural patterns, rather than why the capacity for culture evolved, then it seems indistinguishable from the kind of group selection, cultural-system-above-individual-interests perspective that sociobiologists have been so insistently attacking. Clarification would be appreciated.

references cited

Allman, William
1988 A Laboratory of Human Conflict. U.S. News and World Report, April 11, pp. 57–58.

Chagnon, Napoleon
1988 Life Histories, Blood Revenge, and Warfare in a Tribal Population. Science 239:985–992.

Divale, William Tulio, and Marvin Harris
1976 Population, Warfare, and the Male Supremacist Complex. American Anthropologist 78:519–538.

Ferguson, R. Brian
1984 A Reexamination of the Causes of Northwest Coast Warfare. *In* Warfare, Culture, and Environment. R. B. Ferguson, ed. pp. 267–328. Orlando, FL: Academic Press.
1988 The Anthropology of War: A Bibliography. New York: The Harry Frank Guggenheim Foundation.

Horgan, John
1988 The Violent Yanomamo. Scientific American, May, pp. 17–18.

Lévi-Strauss, Claude
1944 The Social and Psychological Aspects of Chieftainship in a Primitive Tribe: The Nambikuara of Northwestern Mato Grosso. Transactions of the New York Academy of Sciences 7:16–32.

R. BRIAN FERGUSON
Rutgers University

submitted 11 January 1989
accepted 20 January 1989

response to Ferguson

Most of the problems with my *Science* paper (Chagnon 1988a) R. Brian Ferguson seems to present as his critical discoveries are basically rewordings of what I myself laid out in that paper as important empirical and/or theoretical questions. Since I myself identified them, I can only agree at the outset that they are important questions. I am, however, puzzled about the significance of some of his additional observations, or why he even phrases them as criticisms.[1]

I think his critique has an importance that might be unintended: it reveals key issues on which the cultural-materialist approach seemingly differs from a Darwinian approach. It is important to make these explicit to avoid future misunderstandings and confusions. Let me attempt to provide clarification on a few of the more important empirical and theoretical questions.

Headmen, unokais, *and differential male reproductive success.* Let me address an empirical question at the outset. Ferguson (hereafter RBF) requests further evidence bearing on the question of male status and differential reproductive success. He correctly observes since I have elsewhere shown that headmen have more wives and offspring than other men, it is possible that the higher marital and reproductive success of *unokais* compared to non-*unokais* I reported in my *Science* paper might be attributable to the fact that the *unokai* category contains all the headmen.[2] I had not anticipated that this would be a problem to readers, since I also demonstrated in the same earlier pub-