

Yanomami: An Arena of Conflict and Aggression in the Amazon

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The Yanomami of Venezuela and Brazil have become an arena of conflict and aggression in the Amazon in at least three respects: their internal aggression; the aggression among anthropologists and others concerned with them; and the external aggression against the Yanomami from Western society. As such, the Yanomami provide a microcosm of several aspects of the anthropology of conflict and aggression. After some background, a critical analysis is developed of 10 problem areas that call into serious question the scientific status of Yanomami as one of the most violent human societies ever known in anthropology: the Yanomami as “the fierce people”; documentation of their aggression; inflation of their aggression as warfare; neglect of cross-cultural perspective; modern warfare as reversion to tribalization; the negative concept of peace; male sexist bias; the Yanomami as “primitive”; the character of debates; and research priorities and professional ethics. The analysis has more general implications for the epistemology of the study of aggression. *Aggr. Behav.* 24:97–122, 1998. © 1998 Wiley-Liss, Inc.

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YANOMAMI AS WARRIOR CELEBRITY

The Yanomami have become the most famous anthropological case of a violent society; indeed, they have become the quintessence of chronic and endemic “primitive” or tribal warfare. In the United States, the Yanomami are known mainly from the five editions of the case study by Napoleon Chagnon [1968b, 1977, 1983, 1992, 1997], originally called *Yanomamö: The Fierce People*, and numerous complementary films (especially *The Feast* and *The Ax Fight*) that he made in collaboration with anthropologist-filmmaker Asch. In his own words, “My work on the Yanomami made them instantly the most famous tribe in the world” [Monaghan, 1994, pA18]. Chagnon [1996b, p 217; also see 1997, p 259] claims that:

My 30 year study of the Yanomamo is generally regarded in the academic community as one of the more important studies of warfare in the primitive world and

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of how warfare, kinship behaviour, social organization, demography, economics, and ecology are interrelated.

For three decades Chagnon has persistently characterized the Yanomami as the largest traditional indigenous society surviving in lowland South America; as practicing chronic, endemic, tribal “warfare”; as “fierce”; and as exemplars of “primitive” society. Furthermore, their entire society and culture have been depicted as organized around warfare and other forms of aggression [Chagnon 1968a, p 157]. Accordingly, the Yanomami have become something of the contemporary ethnographic analog of Thomas Hobbes’ philosophical anthropology of man in the state of nature with life nasty, brutish, and short and his *bellum omnium contra omnes* (war of all against all) [see Barnes, 1923; Keeley, 1996, p 16; Kehoe, 1992]. Indeed, Yanomami society has even been identified as a “laboratory for human conflict” [Allman, 1988]. Within anthropology, the Yanomami are discussed as exemplars of “primitive” warfare in most introductory textbooks as well as in much more specialized books in the discipline and beyond [e.g., Daly and Wilson, 1988; Wrangham and Peterson, 1996].

There has been a disproportionate amount of controversy, debate, and criticism, some surprisingly aggressive and personal, surrounding Chagnon’s characterization of the Yanomami as “the fierce people” as well as around his sociobiological explanation of their aggression and other matters. In the press, some of the controversies have been labeled “Warfare Over Yanomamo Indians” [Booth, 1989] and “Bitter Warfare in Anthropology” [Monaghan, 1994]. As a result, the present analysis of the Yanomami as an arena of conflict and aggression emphasizes Chagnon’s work. (For the anthropology of aggression see the excellent reviews by Ferguson [1984] and Otterbein [1972] and the extensive bibliography by Ferguson and Farragher [1988]).

In the final analysis, this essay is not restricted to the Yanomami and Chagnon, here, temporarily, they are the illustrative means to larger ends—research on conflict and aggression in anthropology and other fields. Thus, this essay should be read at two levels, the particular case of the Yanomami and the more general matter of the epistemology of the study of aggression. In particular, two pivotal questions are explored: How does the researcher’s philosophical, theoretical, methodological, political, personal, and moral persuasions select for some research foci, subjects, themes, questions, data, modes of analysis, explanations, and interpretations to the exclusion or neglect of others? What are the implications of this selectivity for our scientific knowledge and understanding of conflict, aggression, and related phenomena? [also see Sponsel, 1994a, 1996a].

BEYOND YANOMAMI ETHNOGRAPHY TO ETHNOLOGY

Actually, Yanomamalogy (the study of the Yanomami) has a surprisingly long and extensive history that begins with the explorations by Alexander von Humboldt in 1800 and includes more than three dozen different anthropologists who have visited or lived with the Yanomami [e.g., Cocco, 1972, pp 47–102; Colchester, 1982; Collins and Weiner, 1977, pp 52, 309, 310; Dole, 1976; Ferguson, 1995; Migliazza, 1972, pp 357–393; Smole, 1976, pp 14–16, 220–222; Sponsel, 1981a, pp 407–410]. I conducted fieldwork with the Sanemá subgroup of Yanomami in 1974 and 1975 for 6 months. The contemporary anthropologists who have conducted the most extensive fieldwork with the

Yanomami are, with the beginning year of fieldwork in parentheses, Lizot (1968), Good (1975), Chagnon (1964), Ramos (1968), and Albert (1975) (see “References”). While Chagnon often states that he has spent more than 30 years studying the Yanomami, the actual time he has accumulated in the field is around 60 or 63 months [Chagnon, 1997, pp viii, 8]. In contrast, Lizot has lived with the Yanomami for more than 25 years [Kerjean, 1988], and Good spent 14 years in the field. It is important to understand that Chagnon, Good, and Lizot overlapped in the areas where they did fieldwork. Thus, rather than being limited to Chagnon’s single *ethnography* (description of a culture), the accumulated publications of numerous ethnographers result in a Yanomami *ethnology* (multiple ethnographies that can be compared to identify cultural variation as well as points of agreement and disagreement among ethnographers).

Although there are many spellings as well as synonyms (e.g., Sanuma) for the word Yanomami, I follow Lizot’s usage, except where different in quotes. For a brief summary of Yanomami culture see Hames [1994]. A comprehensive bibliography is available in the study by Ferguson [1995]. In English, the best ethnographies are by Lizot [1985] for the Yanomami in Venezuela and by Ramos [1995] for the Sanuma in Brazil. Useful ethnographies in other languages are those by Cocco [1972] and Lizot [1987] in Spanish, Albert [1985] in French, and Zerries [1964] and Zerries and Schuster [1974] in German. Among the several dozen films and videos on the Yanomami, in my opinion by far the most balanced and humanistic is *Warriors of the Amazon*, which Lizot made in collaboration with the television science series *Nova*.

The Yanomami are one of the largest indigenous nations remaining in the Amazon, and supposedly until the 1980s they were one of the least acculturated (changed) by contact with Western society. The population has been estimated at about 8,500 individuals in Brazil and 12,500 in Venezuela. This population is scattered in some 363 villages that range from a few dozen to a few hundred people. Travel times between villages are from half an hour to a week or more by foot [Hames, 1994, p 374].

Yanomami territory straddles the mountainous headwaters of the Orinoco and Amazon river drainage basins along the border between Brazil and Venezuela. Traditionally, as an interior tropical rain forest society, the Yanomami followed a mixed subsistence economy primarily of foraging (hunting, gathering, and fishing) and secondarily of farming (swidden, shifting, or slash-and-burn horticulture) [Good, 1995a; Smole, 1976; Sponsel, 1981a].

The Yanomami interact in a world that is intensely intimate socially as well as ecologically. They live in small-scale, kin-based communities. Traditionally, the members of a village dwell in a *shabono*, a single large communal house with an open central plaza. Each village seems to be relatively autonomous politically, with its own headman who leads by example, persuasion, and developing a consensus. There is no chief or other political authority uniting more than one village let alone Yanomami society as a whole.

VARIETIES OF AGGRESSION AMONG THE YANOMAMI

From the published accounts of the numerous and diverse ethnographers who have visited or lived among the Yanomami, there is no doubt that considerable conflict and aggression occurs in their society. The Yanomami have a pattern of aggressive behavior that is distinguished by a hierarchy of increasing levels of intensity and gravity, from interpersonal to intervillage violence [see Chagnon, 1968a, pp 132–139; Lizot, 1987, pp 554–564].

Yanomami duels are public, institutionalized, conventionalized, and ritualized forms of interpersonal aggression that are governed by a set of rules. These duels are usually between individuals from different villages. In a physical duel, a pair of individuals alternate hitting each other several times until one individual either retreats, collapses, or is incapacitated. These duels include chest-pounding with a closed fist (sometimes wrapped around a rock), side-slapping with an open hand, and the use of weapons such as a wooden club or a long pole that may be used like a club or as a spear. Usually, these types of duels are not intended to cause serious harm, and they do not do so. A serious injury or even death may lead to the escalation of the aggression to more dangerous or even lethal forms. Sometimes a bush knife (machete) or steel ax may be used, but usually only the flat side (see the video *The Ax Fight*). Duels are simultaneously a controlled release of aggression and usually an effective form of conflict resolution. Yanomami duels are comparable with combative sports in other cultures, such as boxing in our own, except that there is no regular referee or any protective gear. Most fights start over sexual matters like infidelity, jealousy, forced appropriation of women from visiting groups, failure to honor a girl promised for marriage, and (rarely) rape [Chagnon, 1988, p 986].

A raid usually involves several men waiting outside an enemy village to ambush at dawn the first man who leaves the *shabono* for an activity such as elimination or bathing. Usually only one or two individuals are killed, but sometimes there is a massacre of 10 or more people [Chagnon, 1988, p 987]. Several of the raiders may shoot arrows into the victim even after death, and then the raiders try to retreat unnoticed into the forest and return to their home village as quickly as possible [Chagnon, 1968a, pp 137, 138; Good, 1991, p 44]. The element of surprise is critical. Raiding parties usually involve 10–20 men, but some have been as large as 60 men when two or more villages unite against a common enemy village [Chagnon, 1997, p 223]. On rare occasions, if no one exits the *shabono*, then raiders may shoot a volley of arrows through the central opening, hoping to hit someone, and then flee. The most common reason for a raid is revenge for a death in the home village. Raiding is also a major way for men to achieve social prestige. A by-product of a raid may be the abduction of one or more women who may be gang raped in the forest and then gradually integrated into the raider's village and married.

In a treacherous feast, the host villagers turn on their guests when their guard is down, and they may kill several before the remainder can flee to the refuge of the surrounding forest and eventually escape back to the relative safety of their home village. However, sometimes the fleeing guests are ambushed by some men from the host village and/or an allied village who wait outside in the nearby forest. In short, the treacherous feast amounts to a planned massacre.

It is beyond the scope of this article to consider the explanations for Yanomami aggression and warfare. Suffice it to say that four different explanations have been applied to Yanomami aggression: eclecticism [Chagnon, 1968a, p 112], cultural materialism [Harris, 1984a, 1984b], sociobiology [Chagnon, 1988, 1990a], and regional political economy during colonialism [Ferguson, 1992a, 1995]. All are premised on the scarcity of some strategic resource: women (Chagnon), animal protein (Harris), or steel tools (Ferguson). All are in a *general* sense materialistic, deterministic, mechanistic, and reductionistic. On the other hand, for a mentalistic explanation so far there are only enticing hints from Lizot [1977, p 515; 1994a, p 214]. For a brief review of theoretical

explanations see Bodley [1994, pp 64–68], and for more extended discussions see Albert [1989, 1990], Beckerman [1979, 1994], Bower [1991], Chagnon [1980, 1989c, 1990b, 1995, 1996a, 1996b], Chagnon and Hames [1979, 1980], Crocker [1969], Durham [1976], Ferguson [1989a, 1989b, 1989c, 1990], Good [1987, 1995b], Gross [1975, 1982], Hames [1980, 1989], Harris [1984a, 1984b], Lizot [1977, 1994a], Otterbein [1994a, 1994b], J.B. Ross [1980], Ross and Ross [1980], Sponsel [1983, 1986], and Vayda [1989].

10 PROBLEMS

There are at least 10 problem areas in Chagnon's characterization, analysis, and interpretation of Yanomami aggression and warfare: the image of "the fierce people"; documentation of aggression; feuding as warfare; neglect of cross-cultural perspective; warfare as tribalization; the negative concept of peace; male sexism; the label "primitive"; the character of some of the debate; and research priorities and ethics. Some of these also apply in various ways and degrees to some other ethnographies of the Yanomami.

Fierce?

At least five reasons may be suggested for the persistence and popularity of Chagnon's case study. First, it is very well written, sprinkled with personal anecdotes and candid reflections, dangerous and heroic adventures, cultural surprise and shock, tragedy and humor, and sex and violence. Second, it has many of the attributes of prestige for ethnography [see Fischer, 1969, p 13]. Third, it has the magic of science, with numbers, statistics, and computer models.

Fourth, the book resonates with the American obsession with violence. Whatever the noble truths about the history of America, there are also the ignoble truths that the country was built on violence, e.g., the genocide, ethnocide, and ecocide against indigenous peoples [Bodley, 1990], and numerous wars, e.g., the War of Independence, the Civil War, the Spanish-American War, World War I and World War II, the Korean War, the Vietnam War, and the Gulf War [see Duclos, 1998; Fried et al., 1968; Palmer 1972]. The national sport in American culture, football, is clearly a ritualization of warfare and also can be seen as reflecting gender inequality. Chagnon's book appeared during the Vietnam War. It reflects concerns of the time and may have been comforting for some American readers to discover the Yanomami as a society that in some ways was supposed to be even more violent than American society [Sponsel, 1992]. The Yanomami, as supposedly one of the world's most violent societies, remain relevant to an American society that increasingly suffers from epidemics of aggression—domestic abuse, random violence, gang- and drug-related violence, serial murders, massacres, terrorism, and warfare [e.g., American Medical Association, 1995]. Beyond the United States, there are epidemics of many types of aggression as well, of course [Kaplan, 1994]. (Shortly I will consider whether the Yanomami really are as violent as they have been characterized ethnographically, most notably by Chagnon. For other characterizations of Yanomami violence, see Ales [1984], Biocca [1996], and Valero [1984], and for critical reading, see Atkinson [1992], Brettell [1996], and Hammersley [1990]).

Fifth, the Yanomami are portrayed as savages—remote, isolated, primitive, and fierce. The latter attribute especially demands scrutiny. Since his earliest publications, Chagnon

[1968a, pp 124–132] has viewed “the *waiteri* complex” as the single most important component of the militant ideology behind Yanomami aggression:

The motif of Yanomamo ideology is contained in their notion of *waiteri* (ferocity). Members of autonomous villages gain certain advantages by presenting an agonistic stance to their neighbors in the interest of preserving their sovereignty. The primary advantage lies in the more exclusive control a village thereby maintains over its own women in a milieu where acquisition of females is a major preoccupation [p 124].

Furthermore, it is not only Chagnon who has continued in this characterization; textbook and other authors have sensationalized it too. For instance, in a summary of some of Chagnon’s work, Harris [1974, p 87, 88] writes:

By the time a typical Yanomamo male reaches maturity, he is covered with the wounds and scars of *innumerable* quarrels, duels, and military raids. Although they hold women in great contempt, Yanomamo men are *always* brawling over real or imagined acts of adultery and broken promises to provide wives. Yanomamo women are also covered with scars and bruises, mostly the result of violent encounters with seducers, rapists, and husbands. *No* Yanomamo woman escapes the brutal tutelage of the typical hot-tempered, drug-taking Yanomamo warrior-husband. *All* Yanomamo men physically abuse their wives. Kind husbands merely bruise and mutilate them; fierce ones wound and kill.

(For other examples see Bates [1996, p 133], Lindholm and Lindholm [1982], and cf. Michaels [1982]).

Chagnon’s book was not titled something like “The Mavaca Yanomami,” even though it was based mostly on fieldwork in that area. Furthermore, Chagnon subtitled the first three editions of his book, *The Fierce People*, as if all Yanomami were fierce (all groups, all individuals, at all times, in all places) and as if any single appellation could adequately characterize something as complex as a human society [see Campbell, 1989]. For example, Good [1991, p 69], who lived with the Yanomami for some 14 years, observes:

As I began to understand this better, I got increasingly upset about Chagnon’s “Fierce People” portrayal. The man had clearly taken one aspect of Yanomama behavior out of context and in so doing had sensationalized it. In the process he had stigmatized these remarkable people as brutish and hateful.

Even Asch [1991a], who collaborated with Chagnon in making many films on the Yanomami, is critical:

“The fierce people” indeed, you can’t call an entire society the fierce people or any one thing for that matter.... You could say, however, that Chagnon is “the fierce person.” [p 35].

Asch [1991a] also refers to the “irresponsibly categorized and grossly maligned ‘fierce people’ ” [p 38]. If a single attribute were sufficient, then it is possible that other anthropologists might have described the Yanomami as the orators, humorists, tricksters, foragers, naturalists, or ecologists, but any single label would be simplistic. The construction “the fierce people” not only leaves out most of the population (women, chil-

dren, and the elderly), but it doesn't even apply to all adult men. Not every man is fierce. Some avoid or reject wife beating, duels, raids, and treacherous feasts. Many start on a raid, but some soon drop out with excuses or rationalizations [Chagnon, 1997, pp 198, 203].

Furthermore, Chagnon derives the label fierce from only one meaning of the word "*waiteri*," something that reflects his focus on conflict and aggression. Ernst Migliazza [1972, p 421, 422], a linguistic anthropologist who spent many years with Yanomami as a missionary, explains: "The term *waitiri* has a semantic range from brave, courageous, daring, fearless to savage, furious, wild, aggressive, and fierce, depending mainly on the context and situation." Lizot [1975a, p 89] translates the term "*waithiri*" as fierce, valiant, and proud. Montgomery [1970, p 154] states that the term "*wathiri*" refers to someone with a bad disposition or who is ill-tempered, and it is usually not a compliment.

After more than two decades of criticism, in the 4th edition of his case study Chagnon [1992] dropped the subtitle "The Fierce People," but he did not significantly alter the orientation, tone, or content of the text—obviously the Yanomami are still portrayed as "the fierce people." Indeed, the book begins with a Prologue on "The Killing of Ruwahiwa." The cover photos of all five editions of Chagnon's case study focus on aggression, a sharp contrast to the covers of the books by Good [1991], Lizot [1985], and Ramos [1995]. One might conclude that this orientation reflects, at least in part, Chagnon's attitude toward the Yanomami, which, among other things, may be evidenced by some of the equipment he has taken to the field, such as cans of chemical mace [Good, 1991, pp 33, 34], a British commando knife [Chagnon, 1997, p 191], and an electric stun gun [Chagnon, 1997, p 47].

Chagnon's characterization of Yanomami as one of the most violent societies in the world is an interpretation with which most other anthropologists who have lived with the Yanomami would not agree. Indeed, Lizot [1985, p xiv] states that one goal of writing his own ethnography was to set the record straight:

I would like my book to help revise the exaggerated representation that has been given of Yanomami violence. The Yanomami are warriors; they can be brutal and cruel, but they can also be delicate, sensitive, and loving. Violence is only sporadic; it never dominates social life for any length of time, and long peaceful moments can separate two explosions. When one is acquainted with the societies of the North American plains or the societies of the Chaco in South America, one cannot say that Yanomami culture is organized around warfare. They are neither good nor evil savages: These Indians are human beings [also see Lizot's introduction in Biocca, 1996, pp xvii–xxvi].

Also, Good [1991] views Chagnon's emphasis on violence as misleading [pp 13, 55, 56, 73, 174, 175]. Good perceptively points out that because the Yanomami live in a communal house without inner walls, any violence is so public and obvious that the observer can easily become obsessed with it, whereas other prosocial or nonviolent aspects of behavior can be readily missed by contrast [pp 33, 73]. However, Good is much more impressed with the relative harmony in such an intimate society [pp 13, 33, 69, 80, 82]. For example, he writes:

To my great surprise I had found among them a way of life that, while dangerous and harsh, was also filled with camaraderie, compassion, and a thousand daily lessons in communal harmony [p 13].

...The more I thought about Chagnon's emphasis on Yanomama violence, the more I realized how contrived and distorted it was. Raiding, killing, and wife beating all happened; I was seeing it, and no doubt I'd see a lot more of it. But by misrepresenting violence as the central theme of Yanomama life, his *Fierce People* book had blown the subject out of any sane proportion [p 73].

Good also asserts that Yanomami men are not macho [p 80], that they limit rather than maximize violence [p 74], and that they lack open warfare [pp 44, 46].

I lived with a northern subgroup of Yanomami, the Sanema, in the Erebató River area of Venezuela for a mere 6 months in 1974 and 1975 to collect a portion of the material for my dissertation for Cornell University, which focused on the ecology of hunting in the Amazon. The most serious episodes of aggression that I witnessed were a few loud arguments between a husband and wife, one club fight, and three false alarms of raids. To my surprise, people in that village and three neighboring villages were simply nothing like "the fierce people" described by Chagnon. Furthermore, I had taken a copy of his book along as one illustration to help me explain the kind of work I was doing. Although some men were absorbed by the pictures, I was asked not to show them to children as they provided examples of undesirable behavior. These Yanomami did not value fierceness in any positive way. These people were admittedly influenced in some ways by a Ye'cuana village and a Catholic mission within a half-day journey by foot and canoe, but they were still in numerous respects clearly Yanomami. (Many of the villages where Chagnon worked were also influenced by missionaries and other outsiders [Ferguson, 1995, pp 181, 182]).

At the same time, there are understandable reasons for differences in characterizations, interpretations, and analyses of the Yanomami and their aggression, as suggested by Heider's [1988] analysis of why ethnographers who have worked with the same society might disagree: someone is wrong, they are looking at different cultures or subcultures, they are referring to the same culture at different times, and/or they are looking differently at the same culture. In the latter case, Heider views their different viewpoints on the same culture as resulting from differences in the ethnographers' personalities, value systems, own cultures, theoretical orientations, research plans, lengths of time in the field, knowledge of the language, degrees of rapport, and so on [see Asch, 1991b; Chagnon, 1996a, p 204; Ramos, 1987].

Pandian [1985] asserts:

Contemporary anthropology continues to invent other peoples to serve as vehicles to conceptualize important social and intellectual problems of the Western human self today. We have invented the Yanomamo of South America as a symbol to conceptualize human aggression and sexuality [p 48].

...In other words, the social and cultural reality constructed by the anthropologist is actually a portrait of his own psychological reality, as dictated by the ideas that are considered meaningful to him and his audience [p 90; also see pp 62–69].

Moreover, how ethnographers portray aggression can have practical consequences for the people in question. This was early recognized by Davis [1976, p 23]:

When a people is being exterminated, it is more than an academic question whether an anthropologist chooses to describe that people as "harmless" or "fierce." The images which anthropologists present of other peoples and cultures are often det-

rimental elements in the course of human events. Some of these images touch the roots of human sentiments and lead people to struggle for the national and international protection of aboriginal peoples' rights. Other images reinforce popular prejudices and, in the hands of more powerful elements, become convenient rationalizations for wiping native peoples off the face of the earth. In the 19th century, ideas of "savagery" provided a national ideology for the slaughter and extermination of scores of North American Indian tribes.

More recently, according to the Brazilian Anthropological Association [Carneiro da Cuna, 1989] and others, Chagnon's characterization of the Yanomami as "the fierce people" was picked up from US media by the conservative press in Brazil and used as one means to rationalize the assimilation and civilizing of the Yanomami (see Chagnon's [1989b] response). This would make it much easier for gold miners and others to exploit Yanomami land and resources. Charles Brewer-Carias, whom Chagnon [1997, pp xi, xiv, 81, 86, 231, 254, 255] identifies as a long-term collaborator in the field, is well known in Venezuela as a gold miner [Misioneros del Alto Orinoco, 1991; Tierney, 1997]. (Also see Keeley [1996, p 166].)

Chagnon's characterization of Yanomami culture and aggression is not a totally arbitrary construction, but it may contain a mixture of objective and subjective elements. Fortunately, many of these can be readily sorted out. Given the fact that numerous anthropologists have conducted extensive fieldwork with the Yanomami, any areas of underlying broad agreement among them can be extracted as largely ethnographic reality. Then the areas of sharp disagreement need to be carefully weighed as to whether they are primarily factual or interpretative. In the case of Chagnon's image of "the fierce people" and the often suggested ubiquity of violence, the fact that almost all of the other anthropologists who have conducted fieldwork with the Yanomami strongly disagree with Chagnon indicates that Chagnon's own interpretation is idiosyncratic. At the same time, there is general agreement that considerable conflict and aggression exist in Yanomami society.

Documentation?

Surprisingly, however, on close inspection the evidence for aggression is mostly anecdotal, although a few detailed narrations are available [see Chagnon, 1997; Lizot, 1985]. It does not seem that any anthropologist has actually gone on a raid or witnessed a treacherous feast, so most descriptions are reconstructed from the memory of informants in interviews, even if carefully cross-checked. For instance, Chagnon [1988, p 991] states:

While I witnessed many violent and near-lethal conflicts, in none of these incidents did the participants die while I was present. I did not accompany raiding parties and did not witness the killings that occurred while I lived there. News of killings travels fast and is widely known. All the data on violent deaths are therefore based on assertions of multiple informants whose accounts were cross-checked. There was remarkable consistency in their reports on violent deaths.

(However, Chagnon [1997, p 201] did facilitate a raid by providing transportation in his motorized boat.)

Despite the accumulation of many years of fieldwork, neither Chagnon, who claims that he is the recognized authority on Yanomami warfare, nor any other anthropologists

have provided a clear, systematic, quantitative account of the various types of violence with their frequency and duration, number of individuals involved, injured, and/or killed, and so on for a representative sample of villages in a region over any substantial time period [Sponsel, 1983, p 207]. For example, in the most sophisticated demographic study on any Yanomami group, Early and Peters [1990, p 122] assert that Chagnon never conducted any focused, demographic study and that he never made a satisfactory analysis of mortality and fertility. What has been recorded about Yanomami aggression is remarkably sketchy and incomplete [see also Chagnon, 1996a, p 204]. For instance, Chagnon [1968a, p 141; 1997, p 9] records that one village of 200 people was raided 25 times in 15 months and lost 10 people and that in a treacherous feast 15 people from a village of 115 were killed in a single day. However, he does not indicate how representative this village is.

Thus, despite all of the writing and discussion on Yanomami aggression, actually the ethnographic record of their aggressive behavior is remarkably poor compared with the records on other groups [e.g., Koch, 1974; Meggitt, 1977]. This renders controlled comparison between groups within Yanomami society difficult. Also it renders any meaningful cross-cultural comparison between the Yanomami and other societies, like the Mae Enga and the Jalema of New Guinea, even more difficult, except at a high level of generality. To a large extent, this stems from the custom of an ethnographer working intensively in one or a few neighboring villages within a single region. Only recently have anthropologists begun to appreciate the enormous variation within the Yanomami environment, society, and culture [Chagnon, 1992, pp 81–91], although this was cautioned earlier [Sponsel, 1983, p 207] and Chagnon [1968a, pp 113, 114, 116] was already aware of some of the variation. In addition, only recently have some systematic comparisons been attempted between the different regions of the Yanomami, especially by Ferguson [1995], even though this was done earlier for language [Migliazza, 1972]. Thus, until recently there has been a tendency to use work in one area to characterize all Yanomami, with aggression and warfare in particular portrayed as ubiquitous throughout their territory and history, especially in the earlier editions of Chagnon's book. It is increasingly obvious that violence is not ubiquitous; that some individuals, groups, areas, and periods are much more violent than others; and that a village may experience several years or even decades of peace between explosions of major violence [Chagnon, 1992, pp 87–91; Lizot, 1985, pp xiv–xv; and especially Ferguson, 1995].

Warfare?

Already in one of Chagnon's [1968a] earliest public statements on the Yanomami, he was criticized for not being clear and explicit about the definition of war; moreover, it was suggested that Yanomami aggression was more like a youthful brawl or street fight than real war [Fox, 1969, p 315; Service, 1968, p 160]. These two problems persist three decades later [Chagnon, 1996a, p 218; 1997, p 185].

In anthropology, war may be defined in such a narrow way that it is restricted to particular levels of sociopolitical organization developing roughly during the last 10,000 years of cultural evolution with the Neolithic (sedentary farming communities) and/or with the state around 5,000 years ago. Alternatively, war may be defined so broadly as to render it a cross-cultural universal, both in historic and prehistoric times. For example, Heider [1997, p 235] defines war merely as "organized armed conflict between two independent social groups." (One can only wonder about the ideological, political,

or other purposes behind pursuing either an extremely broad or extremely narrow definition of war, since they are rarely made explicit.)

In an encyclopedic inventory of cross-cultural research on human aggression, Levinson [1994, p 183] comments on the definition of war:

While there is no single definition of war that is accepted by all experts, nearly all definitions include most of the following components: (1) warfare is a form of human conflict, (2) it involves the use of organized force, (3) it occurs between politically autonomous communities, (4) it is purposeful, (5) it involves the use of weapons, and (6) it involves the killing of the enemy.

The third and fifth criteria are problematic in the case of the Yanomami. No village is completely autonomous politically, given numerous alliances (intermarriage, kinship, trade, ceremonial). Among the Yanomami, the units of residence, kinship, and politics are not neatly isomorphic, but overlap in diverse, complex, and fluid ways. Chagnon [1988, p 987] observes that: "The Yanomamo village, however, is a transient community whose membership changes by migration, emigration, and fissioning..." Thus, the fighting between villages is not exactly between politically autonomous or independent communities. Chagnon [1988, p 988] writes: "If as Clausewitz suggested, (modern) warfare is the conduct of politics by other means..., in the tribal world warfare is ipso facto the extension of kinship obligations by violence because the political system is organized by kinship." It is also noteworthy that unlike societies such as the Mae Enga, the Yanomami do not have special weapons for warfare, but simply use the same bows and arrows as in hunting [cf. Chagnon 1997, p 181; Horgan, 1988].

Although there may be some utility and even validity in a simple, broad definition of warfare, it does not seem to be very meaningful to group together under the same category called "warfare" the Yanomami, Cheyenne, Kwakiutl, Iroquois, Dani, Mae Enga, Maori, Ilongot, Nuer, Zulu, and other societies when the types, frequency, and intensity of their aggression are so extremely different. Neither would it seem to advance understanding to lump together Yanomami raids, Indian-White wars in colonial America, the American Civil War, the Vietnam War, the Gulf War, and wars in Somalia, former Yugoslavia, Afghanistan, and so on. Yanomami arrows tipped with curare hardly seem to belong in the same category with the atomic bombs dropped on Hiroshima and Nagasaki during World War II or the stealth bombers used in the Gulf War! My point is that although in some circumstances it is necessary to employ a general category like "war," this tends to neglect tremendous variation, and application of the term to the Yanomami requires more careful consideration and qualification.

In the particular case of the Yanomami, the very general definition of warfare as "armed aggression between two groups" simply doesn't even apply because most raids involve no more than a few men ambushing an individual leaving the village at dawn, after which the raiders try to escape as quickly as possible without being noticed. This does not involve two opposed groups of warriors in open combat. Most of the aggression in Yanomami society involves ritualized fights between pairs of individuals akin to combative sports, although others in the community quickly become allies along kinship lines that are simultaneously political. Even the highest forms of aggression in Yanomami society, the raid and treacherous feast, are hard to consider as warfare. Raids are not always followed by counter-raids. In some cases there are many years of relative peace between raids. Raids are not at all comparable with warfare in New Guinea,

which has been superbly documented among the Jalemo [Koch, 1974] and Mae Enga [Meggett, 1977]. (Also see the video *Dead Birds* about the Dani.)

Some anthropologists lump feuding and raiding together with warfare [e.g., Ember, 1978; Levinson, 1994, p 145], whereas, others distinguish feuding, raiding, and warfare as three distinct categories of aggression [e.g., Driver, 1961; Levinson, 1994, pp 63–66; Otterbein, 1994b; Pospisil, 1968]. From a cross-cultural perspective, the type of aggression among the Yanomami that Chagnon [1997, p 185–189] and others label warfare, may be more appropriately identified as blood feuds, blood revenge, or kin group vengeance involving the tactics of interpersonal dueling with weapons, alternating intervillage raiding by ambush, and the treacherous feast. An emic (native thought) approach to this question involves Yanomami language. The Yanomami do not have any words that are exactly equivalent to *war*, only *niyayou*, which means to shoot arrows at each other [Lizot, 1994a, p 231].

Actually, Yanomami feuding is reminiscent of the famous blood revenge between the Hatfield and McCoy families that cost 12 lives in a cycle of murders and raids from 1882–1890 in the Appalachian mountains between Kentucky and Virginia [Rice, 1982]. Indeed, although there are obvious and important differences between this famous feud and Yanomami feuds, there are also numerous similarities, including small, kin-based communities of intermarrying lineages, the cycle of kin group vengeance, lack of effective centralized political authority and legal institutions, and the remote, forested mountain habitat. There was also the “yellow journalism” of the popular press, which focused on selected fragments of reality, exaggerating and sensationalizing them into a myth of savagery. In this way were shaped outsiders’ negative images of the people who became legendary as supposedly the opposite of the law, order, and harmony in American society and culture. Interestingly, there were feuds elsewhere that were many times worse.

The previous discussion seriously questions whether the highest level of aggression in Yanomami society is warfare or only blood feud through revenge raids involving ambush. The only type of aggression that might be appropriately classified as some kind of low-level warfare is the intertribal attacks that occurred earlier in the century between some Yanomami and their indigenous neighbors, especially some Ye’cuana communities [see Chagnon, 1968a, p 129].

Furthermore, the Yanomami cannot be considered to be a militaristic society by anyone who accepts the standard criteria for such a society:

A society is considered militaristic when it engages in warfare frequently; when it devotes considerable resources to preparing for war; when its soldiers kill, torture, or mutilate the enemy; and when pursuit of military glory is an objective of combat [Levinson, 1994, p 115; cf. Eckhardt, 1973].

(With regard to the criterion of military glory, perhaps being *waitiri* is one indication, but it is also relevant that villages are usually named after garden sites rather than after men who are *waitiri* [Chagnon, 1968a, p 150]).

Some anthropologists view war as a catalyst or prime mover in cultural evolution, especially the origin of the state [Carneiro, 1970, 1994; Cohen, 1984]. But Chagnon [1988, p 985] goes even further when he includes the following statement among details of a quantitative, sociobiological analysis of Yanomami aggression: “Violence is a potent force in human society and may be *the principal* driving force behind the evolu-

tion of culture” (emphasis added). In another article, Chagnon [1996a, p :215] states: “Violent, lethal behaviour is not an unusual event or ‘pathology’, social or otherwise, but it appears to have been commonplace in the past....” [also see Balandier, 1986]. However, Chagnon offers no theoretical arguments or cross-cultural evidence to substantiate such claims [cf. de Waal, 1989; Keeley, 1996; Knauft, 1996; Kohn, 1990; Montagu, 1952]. Also, it is questionable whether the particular pattern of conflict and aggression found in Yanomami society can be extrapolated to all tribal or “primitive” societies, as Chagnon [1996a, p 217; 1997, pp 205, 206, 259] suggests [cf. Overing, 1989; Thomas, 1982]. The tremendous diversity of cultures in the world renders this highly unlikely.

Neglect of a Cross-Cultural Perspective?

Many of the above difficulties and limitations stem from the tendency of most Yanomamologists to largely ignore pertinent research with other cultures and cross-cultural research. While it is natural for any ethnographer focused on long-term fieldwork with the Yanomami to emphasize that group, it is unscholarly and unanthropological to ignore cross-cultural research [e.g., Chagnon, 1996a].

Indeed, a cross-cultural perspective can provide substantial insight into Yanomami aggression, making it quite apparent that the Yanomami are *not* one of the more violent societies on the planet [cf. Chagnon, 1988, p 989]. From Levinson’s [1994] encyclopedic inventory of cross-cultural research, in surveys with samples ranging from 40 to 240 cultures, 50% or more of the cultures share the following practices with the Yanomami: violence as a means of solving problems, infanticide, wife-beating, bride theft or raiding, rape, anger and aggression over the death of a loved one, blood feuding, and village fissioning. Furthermore, perusal of the same source reveals that 50% or more of the cultures in the surveys practice the following forms of violence, which are *absent or at least very rare* among the Yanomami: physical punishment of children, painful adolescent initiation rites, premeditated homicides, capital punishment, internal warfare, external warfare, and torturing of enemies. Also found in some societies, but apparently *absent* among traditional Yanomami, are genital mutilation, drunken brawling, husband-beating, suicide, gerontocide, human sacrifice, cannibalism, head-hunting, militarism, women warriors, social stratification (class inequality), slavery, racism, ethnic conflict, religious conflict, ethnocide, genocide, and total war. Thus, a cross-cultural perspective calls into question claims that distinguish the Yanomami as “the fierce people” or as an exceptionally violent, militaristic, or warrior culture. (This is not to ignore the methodological difficulties of cross-cultural research, but to at least consider its relevance.)

Chagnon [1988, p 991] cautions that “violence waxes and wanes radically over relatively short periods of time in most tribal societies, and grossly different estimates of homicide rates for the same population can be obtained from studies done of the same local group at two different periods of time, or neighboring groups at the same point in time.” Levinson [1994, p 85] points out that the definition of homicide varies from culture to culture, and there are wide variations on how reliably homicides are reported or documented. Albert [1990, p 561] goes so far as to suggest that violence and homicide are ethnocentric concepts. Homicide or murder may also be absent, or at least rare, among the Yanomami [cf. Knauft, 1987; Palmer, 1965]. Killing results from duels, raids, and treacherous feasts. In the case of duels, when a dueling partner dies it is inadvertent, something that is somewhat comparable to manslaughter in the American

legal system. In the case of raids and feasts, the killing is somewhat comparable to the context of modern warfare in which it is considered justified. Unfortunately, research on Yanomami aggression has not clearly, explicitly, and systematically examined such concepts, either in an etic (Western scientific) or emic (native) perspective. However, the *unokaimou* ritual clearly indicates that the Yanomami recognize the extraordinary nature of the act of killing another human being, and something of its disruptive social, psychological, and spiritual consequences.

Tribalization?

In the media and elsewhere, the conflict and violence of recent years in the former Yugoslavia, Somalia, Afghanistan, Rwanda, and other countries has been dismissed as tribalization, supposedly a reversion back to some primitive tribal condition. This mirrors the uncritical and simplistic acceptance of a Hobbesian philosophy of human nature [Feibleman, 1987; cf. Kohn, 1990]. Of course, if aggression is inevitable as a natural expression of human nature and/or tribal heritage, then that tends to provide some relief from the fact that, at least for human beings, it involves decisions including moral choices. It may also discourage many persons from trying to reduce violence and seek nonviolent alternatives for conflict resolution and the creation of a more peaceful society and world. However, taking the position of either Hobbes or Rousseau to an extreme is contrary to the ethnological record, which reveals a tremendous range of cultural diversity that varies from violence and war to nonviolence and peace [Gregor, 1996; Robarchek, 1989a, 1989b; Robarchek and Robarchek, 1992, 1996; cf. Chagnon, 1996a, p 206]. The enormous variety and variability of more than 6,000 extant cultures renders absurd most simplistic generalizations about human nature as all/none, always/never, either/or, this/that.

In the case of the Yanomami, Ferguson [1992a, 1992b, 1995] undeniably demonstrates that through disease, material goods, and other influences, missionization and other Western agencies have been terribly disruptive and even destructive of indigenous lives and societies. According to Ferguson, a major cause of much of Yanomami aggression *during the colonial era* is Western influence [also see Ferguson and Whitehead, 1992; Knauff, 1993]. Whether or not Ferguson's thesis has any validity, for the study of aggression, his work should force anthropologists to reevaluate previous ethnographies as well as to evaluate and design future research in light of the distinct *possibility* that what was formerly believed to be chronic, endemic "primitive" or tribal warfare may actually have been triggered (or at least intensified) and transformed by contact (indirect or direct) with Western "civilization."

Negative?

There is an even more serious problem with the study of aggression by Chagnon, some other anthropologists, and some scientists and scholars in general. Most are biased by what scholars in peace studies refer to as *the negative concept of peace*; that is, peace is reduced to simply the absence of war and nothing more [e.g., Levinson, 1994, p 136]. (For an insightful analysis of conceptions of peace, see Rapoport [1992, pp 139–168].)

In contrast, *the positive concept of peace* refers not only to the absence of war and other forms of violence (direct and indirect), but also the presence of freedom, equality, social and economic justice, nonviolent means of conflict management and resolution, prosocial institutions, values, behavior, cooperation, harmony, and so on [Barash, 1991;

Sponsel, 1994a, pp 5–7; 1996a, pp 96–98]. Positive peace is not simply an ideal, but some aspects are realized to a degree in many societies, especially hunter-gatherers [Bonta, 1993; Fabbro, 1978; Howell and Willis, 1989; Melko, 1984; Montagu, 1978; Sponsel, 1996a; Sponsel and Gregor, 1994]. Peace is relative rather than absolute, and it is also a dynamic process rather than merely a static condition.

Chagnon's work is channeled by what amounts to the negative concept of peace, e.g., when he writes that the Yanomami "are simultaneously peacemakers and valiant warriors. Peacemaking often requires the threat or actual use of force, and most headmen have an acquired reputation for being *waiteri*: fierce" [1997, p 7, also see p 168]. Chagnon follows some specific strategies associated with the negative concept of peace, such as peace through strength and balance of power. For example, Chagnon [1988, p 986; 1997, p 216] applies Western military and political parlance like "deterrence" and "de-tente" to the Yanomami. This may serve to link his work to the broader framework of research on aggression and war, but the situations are far from analogous and are thus misleading.

Such bias in the study of aggression and war is common within anthropology and beyond. For instance, Heider [1997] includes a chapter titled "War and Peace" in his new cultural anthropology textbook, but actually the chapter is exclusively about war, with the sole exception of one brief paragraph [p 252]. For another anthropological example, see Wolf [1987]. In an illustration beyond anthropology, Wiberg [1981, p 113] concludes from his contents analysis of the *Journal of Peace Studies* from 1964–1980: "For it turns out that out of approximately 400 articles, research communications, etc., published over seventeen years, a single one has been devoted to the empirical study of peaceful societies with a view to find out what seemed to make them peaceful" [Fabbro, 1978].

The bottom line is that studying aggression with aims such as understanding and reducing it is certainly desirable and necessary, but it is just as certainly not sufficient [e.g., Fox, 1994a, pp 87, 88; Sponsel, 1994a, 1996b]. Peace and nonviolence must also be studied explicitly, directly, and systematically in depth. War is no more important than peace, just as in medical science and practice both disease and health must be considered to understand each. Society, culture, politics, and history can not be fully understood without also considering nonviolence and peace. A researcher may prefer to focus on aggression, but to do so exclusively may result in a misleading or distorted view of behavior.

There are even elements of the positive concept of peace embedded in the culture and daily life of the Yanomami, and some are incidental or implicit in the ethnographies of Chagnon, Lizot, and others. Practices that avoid, reduce, or resolve conflict and aggression include humor and joking relationships, public speeches that vent frustration and anger, mediation by the village headman and/or other respected individuals, trekking in which some portion of the villagers departs to forage in remote areas of forest for days, weeks, or even months may defuse growing hostilities, and so on. Village fissioning and fusion—splitting of the village into two communities or a faction from one village joining another village, respectively—are forms of conflict management and resolution that may be primarily violent or nonviolent. Individuals may avoid or withdraw from any type of aggression in the hierarchy of violence, a form of nonconfrontational conflict resolution.

Friendly, cooperative, nonviolent, and peaceful relations between villages may be developed and maintained by alliances based on exchange and reciprocity in trade goods (Yanomami and foreign), feasting, ceremonies (annual peach palm festival, funeral ritual, etc.), women (intermarriage), and kinship. A feast may serve as a reconciliation ritual for two former enemy villages. The ceremonial dialog that usually occurs when there are special visitors to a village and especially as part of a feast for guests may be considered a ritual form of nonviolent conflict management and resolution [see Lizot, 1994b].

These examples could be easily multiplied and elaborated by systematically searching through the available ethnological literature on the Yanomami, just as Ferguson [1995] did for steel tools and other Western influences. However, the previous examples should suffice to demonstrate the main point: nonviolent and peaceful institutions, values, and behaviors exist among the Yanomami but have rarely been explicitly identified, let alone purposefully investigated and described in detail. Furthermore, from this perspective one can begin to imagine how different might have been the characterization of the Yanomami if only Chagnon or other ethnographers had pursued the positive concept of peace. Philosophical and theoretical frameworks not only assist in analyzing and interpreting data, they may also channel the very kinds of data collected and highlighted as well as the conclusions reached [e.g., Fry and Björkqvist, 1997].

Sexist?

The Yanomami have been described as a male supremacist society [Divale and Harris, 1976; Harris, 1974, pp 83–110, 1977, pp 55–66; Lindholm and Lindholm, 1982], but it is not clear to what extent supposed machismo is constructed by anthropologists like Chagnon and Harris [cf. Dow, 1983; Fjellman, 1979; Kang et al., 1979].

Feminist anthropologists Tiffany and Adams [1994, 1995, 1996] provide an insightful postmodernist deconstruction of Chagnon's ethnography. In essence, their perceptive critical analyses expose the male sexist characterization and interpretation of the Yanomami as a society in which women are somehow simultaneously both villains and victims: the primary cause and target of aggression, and yet at the same time unimportant passive actors in village life, society, religion, politics, and warfare. Women are reduced to reproductive and productive machines to satisfy male needs, especially their sexuality and the perpetuation of their genes through progeny. While I find the loaded words and some of the criticisms by Tiffany and Adams excessive, I doubt that many familiar with Chagnon's work can read their analyses without agreeing with many of the points they raise.

From another angle, the ethnological literature doesn't provide much systematic attention to the role of women in politics, violence, nonviolence, peace, and other aspects of Yanomami society and culture, although some points can be gleaned from reports by women [Biocca, 1996; Montgomery, 1970; Ramos, 1979, 1995; Shapiro, 1972, 1980; Valero, 1984]. In particular, Ramos [1979] convincingly argues that the male supremacist complex is not supported by her extensive fieldwork with the Sanumá, a Yanomami subgroup in Brazil. The neglect of the female side of the Yanomami is puzzling, given that their daily lives are so open and public. This suggests some kind of perceptual and conceptual biases.

Cross-cultural research indicates that although men are more likely than women to use direct physical aggression to advance their interests and that women are rarely permitted to be warriors, women frequently play a central role as emissaries between

warring communities and as peacemakers [e.g., Levinson, 1994, pp 4–7, 139, 158]. The above considerations comprise an important frontier for future research to correct any male sexism by actions or default in Yanomami ethnology [see Shapiro, 1972, 1980].

Primitive?

The supposed primitiveness of the Yanomami is certainly an important attraction for anthropologists, the media, and the public [see Cannel and Macklin, 1974; Federici, 1995; Sponsel, 1992]. From his earliest to his most recent publications, Chagnon has labeled the Yanomami as “primitive” [e.g., 1997, pp 5, 10, 11, 19, 31, 76, 79, 139, 144, 145, 211, 247, 248]. (Other contemporary ethnographies of the Yanomami, such as those by Lizot and Ramos, are essentially devoid of the label “primitive.”)

The validity and utility of this labeling are questionable. First, there are many aspects of their daily life and sociocultural system that are especially rich and complex, including their language, oratory, folklore, mythology, and religion, as well as knowledge of ecology [Lizot, 1975b; Wilbert and Simoneau, 1990].

Second, as Ferguson [1995] undeniably documents, Yanomami communities have been influenced by Western contact, direct and/or indirect, for some 250 years. At various times these influences have included slave raiders, rubber tappers, loggers, miners, missionaries, explorers, scientists, the military, border commissions, government censuses, malaria patrols, and so on. For example, a French trader named Francisco Arnoud settled in the general area in the latter half of the 1830s; Agustin Codazzi carried out ethnographic surveys in the upper Orinoco from 1832–1838; and rubber tappers were in and out of the region from 1820–1920 [Ferguson, 1995, pp 181, 182]. As a more recent example of contact, Yanomami leader, Davi Kopenawa Yanomami, won the United Nations Global 500 Award [1988] and has addressed the British House of Commons (in 1989) and the United Nations (in 1993) [Berwick, 1992, p 232, 233; Yanomami, 1994], although he has been disparaged by Chagnon [1992, pp 233, 234; 1997, pp 252, 253; cf. Salamone, 1996, p 49, 50].

Such historical observations on the direct and indirect influence of Westerners on the Yanomami could be multiplied many times over, as Ferguson’s [1995] scholarship documents so thoroughly. Furthermore, as Heinen and Illius [1996] point out in a recent review of Ferguson’s book, this historical material has long been readily available but, with few exceptions, ignored [e.g., Cocco, 1972, pp 35–120; Smole, 1976, pp 14–16, 217–223]. Of course, to acknowledge the history of the Yanomami would be to undermine their primitivity or mythical distance from Western “civilization” as “the other” and in turn to depreciate the prestige of the ethnographer [see Pandian, 1985]. There is also the preference in anthropology for traditional culture that tends to neglect the influences of Western contact and change [Gruber, 1970].

Third, unless very carefully explained and qualified, most modern anthropologists have not regularly used the term “primitive” since the 1960s because it can be pejorative and some would say ethnocentric and racist [Montagu, 1968; Sponsel, 1992]. It would seem better to simply recognize the Yanomami as fellow human beings with a distinctive cultural way of relating to each other, nature, and the supernatural, one among more than 6,000 unique cultures in the contemporary world.

In short, the Yanomami are not an anachronism; the only anachronism is the way the Yanomami are characterized by some authors. Perhaps the only functions of the label “primitive” are to attract readers and as a denial of coevalness, which rationalizes de-

tachment and apathy in the face of the ongoing crises that threaten the survival and welfare of the Yanomami [Fabian, 1991; Sponsel, 1994b].

Scientific?

There has been more criticism of Chagnon than of any other single anthropologist who has worked with the Yanomami, in fact, even more than of all of them combined. In part this may reflect the notoriety of his publications and films and, as indicated previously, his image of the Yanomami as “the fierce people.” A third reason may be biophobia, an almost automatic reaction against any biological explanation of human behavior, the possibility of biological reductionism, and the associated political implications [e.g., Lewontin et al., 1984; Sahlins, 1977]. Biophobia is especially strong among cultural anthropologists for diverse reasons. In this regard, whether one agrees with sociobiology or not, Chagnon deserves credit for his intellectual courage and stamina in persistently applying a sociobiological analysis and interpretation to his data, since he is one of a very small minority of cultural anthropologists who do so.

A fourth reason may be that Chagnon himself seems to attract criticism. Some insight into this is provided by his own statements. Chagnon [1975, p 6] says, “I don’t see how you can write anything of value if you don’t offend someone.” The debates about Chagnon and his work are not always very scientific or academic and are often quite aggressive and surprisingly personal. Furthermore, it would be remiss to not mention that Ferguson [1995, pp 277–342] argues that in some situations Chagnon contributed to conflict and aggression among the Yanomami [Chagnon, 1996b], and Tierney [1998] argues that Chagnon violated both the professional ethics of anthropology and the human rights of the Yanomami.

It is neither feasible nor appropriate here to consider further this controversy and aggression among anthropologists who have worked with the Yanomami as well as others, but there is ample published material for the curious reader to pursue, some 75 articles [e.g., see Albert and Ramos, 1988, 1989; Allman, 1988; Booth, 1989; Cappelletti, 1994; Carneiro da Cuna, 1989; Chagnon, 1989a, 1989b, 1989c, 1993a, 1993b, 1993c, 1995, 1996a; Chagnon and Brewer-Carías, 1994; Fox, 1994b; Good, 1991; Harris, 1984b; Kopenawa Yanomami, 1989; Landes, 1976; Lizot, 1993, 1994a; Monaghan, 1994; Ramos, 1987; Rifkin, 1994; Salamone, 1996, 1997; Sponsel, 1979, 1983, 1991; Tierney, 1998; Turner, 1994; Turner and Kopenawa Yanomami, 1991; Wolf, 1994].

Priorities and Ethics?

In the 1970s, the territory of the southernmost Yanomami in Brazil was invaded by government-sponsored highway construction crews who introduced waves of epidemic diseases that decimated a number of villages. This was done even though a prior human and environmental impact report predicted disaster for the Yanomami if medical teams were not sent in advance to inoculate them against various diseases and if the construction crews were not screened to ensure that they were not carrying any communicable diseases [Goodland and Irwin, 1975; Ramos and Taylor, 1979]. This was the first massive violation of the human rights of the Yanomami by the Brazilian government since the slave raids in the earlier colonial era. Next, in the 1980s, peaking in 1987, tens of thousands of illegal gold miners were allowed by the government to invade Yanomami territory in Brazil, and eventually they spilled over the border into Venezuela. In addition to epidemic disease and social disruption at a catastrophic level, the miners also

degraded the tropical forest ecosystems, especially through their use of mercury, which contaminates soil, water, food webs, and people in the vicinity of the placer mining and for hundreds of kilometers downstream, in the present and for generations into the future [Sponsel, 1997]. The militarization of the Venezuelan border to prevent the illegal invasion of Brazilian miners presents another whole set of problems and threats, including the possibility of various kinds of conflict and aggression between the military and the Yanomami. The frontal attacks on the Yanomami by a combination of government action in some things, and inaction in others, amounts to no less than a synergistic combination of genocide, ethnocide, and ecocide for the Yanomami [Sponsel, 1994b, 1997].

The vast majority of Yanomami die nowadays of disease rather than any direct physical violence of any kind, and to compound the tragedy, most of the diseases are not only curable but also preventable with Western medicine. Given these considerations, the question must inevitably arise as to the research priorities and professional and moral responsibilities of fieldworkers who elect to concentrate on academic questions and issues while largely if not completely ignoring the forces that clearly threaten the survival, welfare, and rights of the Yanomami as human beings [see Diamond, 1968; Oliver-Smith, 1996; Sponsel, 1979, 1981b, 1991, 1995, 1996c; Thomas, 1993].

Science and scholarship in anthropology as elsewhere is neither 100% amoral nor apolitical in implications and motivations. A holocaust is no time for science as usual. There is no scientific reason why internal aggression among the Yanomami is given so much attention and external violence against them so little, when in fact the latter takes a far greater toll in suffering, lives, and the disruption of the society. There is also certainly a humanitarian reason for a shift of research priorities.

Chagnon [1997] provided some basic medical assistance to villages he worked in as well as collaborated with medical researchers, but it is not clear whether any of that research has had a practical benefit for the Yanomami [Chagnon and Melancon, 1983; Neel, 1994; Salamone, 1996, p 42; cf. Colchester, 1985]. Lizot, in addition to collaboration with some medical personnel, researched and published extensive literacy and other school materials in the Yanomami language about their own history, culture, and oral traditions as an important way to promote cultural survival and ethnic identity. Ramos and Taylor [1979], Albert [1994], and associates at the Commission for the Creation of a Yanomami Park and the French organization Doctors Without Borders, have worked persistently under very difficult and sometimes dangerous conditions for decades to promote the survival, health, and rights of Yanomami in Brazil [also see Ramos, 1995; Tierney, 1998].

In a recent chapter in *Genetics of Criminal and Antisocial Behaviour*, Chagnon [1996a, pp 202, 207–209, 214] complains that "...ethnographic descriptions of violence in tribal societies are increasingly opposed by politically correct academics who argue that it is detrimental to the goals of advocates of native cultural survival" [p 202]. Indeed, many anthropologists, including an entire national organization (the Brazilian Anthropological Association), have expressed serious concern that the stigmatization and brutalization of the Yanomami as "the fierce people," both as a label and as a continuing central theme of his work, has been picked up by the conservative media in Brazil and used as a rationalization for forced acculturation and assimilation that amounts to ethnocide and genocide [cf. Besteman, 1996; Jacobs, 1979]. This is not a matter of some fashion of political correctness or the rhetoric of the political left by a few anthropologists as

the preceding discussion has demonstrated. Likewise, aside from cultural survival and politics, the analysis presented in this article suggests that Chagnon's characterization of Yanomami aggression is problematic in numerous ways.

CONCLUSIONS

Even if only 1 or 2 of the 10 problem areas just discussed had some validity, there would be reason for serious concern. However, if all or the majority of them have any validity, then it would be devastating not only for Chagnon, but for the entire profession in which many anthropologists, students, and members of the public have been misinformed about the Yanomami as the quintessential case of chronic, endemic, "primitive" warfare. Not only is there a need to critically analyze the various theoretical explanations for aggression among the Yanomami, but also the conceptual frameworks of ethnographers; their characterizations, analyses, and interpretations of Yanomami aggression and culture; and their research priorities and professional ethics.

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