Letters

Yanomamö Survival

William Booth's attempt (Research News, 3 Mar., p. 1138) to present a "balanced view" of some of the issues involved in my response to the denunciation of my 1988 *Science* article (26 Feb., p. 985) by members of the Brazilian Anthropological Association (ABA) in the January 1989 *Anthropology Newsletter* (*1*) may have caused him to overlook a number of other important scientific issues.

1) Booth begins his article with the seemingly innocent suggestion that my numerous publications on the Yanomamö amount to a simple and *arbitrary* "portrait" of a people "pursuing endless cycles of blood revenge." This view of anthropological research and reporting is then reinforced and given additional authority when he quotes some of my critics' views of my research and how they, taking the moral high ground, arbitrarily choose, instead, to emphasize "mythology" or "symbolic" attributes and to "downplay the role of violence" in the society, arguing that doing anthropology should be a *political* enterprise that guides what you should choose to investigate as you go about painting arbitrary ethnographic portraits.

My ethnographic reports cover many topics and are not the consequence of some arbitrary and misanthropic choice to focus on violence and warfare. I focused on what is clearly an important set of variables in the dynamics of social life in that large group of Yanomamö villages that were the subject of most of my 25 years of research. That was a choice based on the increasingly unfashionable scientific view that anthropologists should try to understand causes and effects of human actions, even if some of them involve unpleasant things.

2) The ABA criticisms of my work were not simply a reminder to me or to other anthropologists that our published works might be distorted by journalists or that their accounts, in turn, might possibly be used by unscrupulous politicians or economic interest groups to justify their own selfish goals. Their criticisms also suggested that I invented or manipulated data for mischievous purposes, that I deliberately described the Yanomamö in terms that provoke racism, that I was practicing or promoting "academic" or some other kind of genocide, and that my arbitrary choice of studying and trying to explain their violence and warfare was probably the reason the Brazilian government allocated multiple, noncontiguous, small "parks" for them. The intent of the Brazilian government to separate the Yanomamö into small, noncontiguous "parks" was publicly known long before my *Science* article appeared.

In spite of the gravity of these remarkable assertions the American Anthropological Association published them in its *Anthropology Newsletter*. One message that emerges is that if you have information on warfare in some other society and publish it even in a carefully documented, cautiously argued article in a prestigious scientific journal, you might be sternly rebuked by your profession. Better to focus on myths than on war.

3) I am astonished at the reaction of the Brazilian anthropologists to my anecdote intended to remind us of the significance of law in thwarting violence in our own culture. They said that it is an advocacy of "complete state control" over native peoples. Yet they are struggling to have the Brazilian government demarcate and guarantee lands for the Yanomamö, that is, to exercise its complete state control over the area. What would you call that?

4) Contrary to what Booth suggests, I do not think the several million anthropology students ("most of the world") who have read my book *Yanomamö: The Fierce People* (*2*) have a simpleminded image of them as only "fierce" people. The many letters I have gotten from readers over the years uniformly express sympathy, admiration, and concern for the future of the Yanomamö. The "popularity" of this college textbook has made millions of people aware of the Yanomamö and has helped establish them as one of the best known tribal groups in the world. I believe their popularity can now be used to help them. The survival of the Yanomamö is now at stake.

In 3 years we will be celebrating the 500th anniversary of the discovery of the Americas by Christopher Columbus. Since 1492, perhaps 80 to 90% of the then existing native American cultures have disappeared because of the violence, diseases, and rapacious policies we who invaded have inflicted on them as our ancestors sought new lives and new opportunities to prosper. The ABA denuciation suggests, among other things, that the scientific approach to understanding human action is incompatible with humane interests and goals and that it is basically destructive. I think not. I would be enormously pleased to report in a brief note to *Science* in 1992 that compassionate members of the AAAS played a role in helping to reverse or hold in abeyance a destructive historical trend through their moral concerns and generosity, and that there is a dignified place for valiant and heroic people like Kaobawä (*3*) in this complex world.

It might be too late to do anything very useful or effective as scientists and as citizens for those most dramatically affected in Brazil by the gold rush; but I believe we can do something humane and effective to help groups of Yanomamö on the Venezuelan side of the border, and I have created the Yanomamö Survival Fund for that purpose. I would be happy to send a description of that nonprofit, tax-exempt fund to interested colleagues.

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REFERENCES AND NOTES

1. N. A. Chagnon, *Anthropol. Newsl.* **30**, 3 (1989).
2. ———, *Yanomamö: The Fierce People* (Holt, Rinehart & Winston, New York, 1968; 1983).
3. Kaobawä is one of the main characters in my 1968 book (*2*) and headman of the village in which I began my field research in 1964. He is still the headman of his village.

Scientific Decision-Making in School

While we can applaud Daniel E. Koshland, Jr.,'s goal of extending scientific competency to all (Editorial, 24 Feb., p. 989), I think he is off target when he urges that we undertake to achieve "scientific competency through fun" by making mathematics fun. Mathematical competency does not necessarily lead to scientific competency; it may, in fact, be misleading to the young to suggest that scientific "proof" can be as rigorous as mathematical proof. Why not science itself in fun modes? Even more "fun"-damentally, we should learn more about how to get children caught up in the decision-making methods of science.

To do this, we must move science in the classroom beyond the limits of the purely physical sciences, in which, too often, an "experiment" is simplistically used to demonstrate "proof," with the implication that this is all there is to scientific inference. Viable alternatives might include, for example, asking the children in a classroom, "Do boys' hearts beat faster, or do girls'?" Or, "Do the hearts of taller people beat faster than those of shorter people?" Or, "Do girls have faster reaction times than boys?" Upon making the simple measurements necessary for deciding such questions, the young would, at once, be using the decision-making methods that professional scientists have learned to use. Suddenly there would be a demand for the mathematics and the probability conceptions found in those methods. Such investigations could be made by children all the way from the lower grades right on through grade 12. And doing it this way would be fun!

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