for the section business meeting time and for C&A-sponsored panels. Some very good sessions are scheduled. We are excited and want them to be well attended to support those who share their work with the rest of us.

Our column welcomes all materials of interest to C&A members. Please direct questions, suggestions and ideas to Ronald Rich at rdrich95@sbcglobal.net

Evolutionary Anthropology Society

John P Ziker, Contributing Editor

Costly Signaling and Consensus Analysis

By Jeremy Koster (U Cincinnati)

Human evolutionary ecologists have traditionally focused on behavior, such as studying which animals hunters pursue, how food is shared within a community, or who provides childcare. With the advent of costly signaling research, however, there is growing interest in the way people think. Accordingly, human evolutionary ecologists can benefit from methods used by cognitive anthropologists, particularly the cultural consensus model developed in the 1980s.

Evolutionary anthropologists have recently applied costly signaling theory to apparently "wasteful" behaviors that seem to provide no fitness benefits to the actor. For example, providing food for a public feast is difficult to explain using evolutionary models such as kin selection and reciprocal altruism. Accordingly, evolutionary scholars have recently proposed that the motivation for these behaviors is to reveal important information about the underlying characteristics of the signaling individual. Signalers might be reliably advertising their desirability as a mate or an ally, for example. An important insight of signaling theory is that both signalers and signal recipients may benefit from the transmission of this information.

To offset the costs associated with the signal, it may be beneficial to broadcast the signal as widely as possible. Evolutionary researchers have therefore emphasized the ways in which public goods, such as collective feasts, can attract large audiences. If signalers are effectively providing reliable information to an audience, then members of the audience should exhibit consensus on the respective characteristics of the signalers. For example, if women are advertising their desirability as wives by signaling a good work ethic, then the men who are attentive to those signals should generally agree on which women are hard workers. The cultural consensus model could be particularly beneficial for this aspect of costly signaling research.

The cultural consensus model was developed to assess the degree to which informants show agreement in their responses to a set of questions or their rankings of items. There is a formal version of the model, which can accommodate multiple-choice questions, but the informal version of the model will likely be more useful for research on costly signaling because it requires only rankings data. Whereas specialized software (such as UCINET or ANTHROPAC) is recommended for the formal model, virtually any statistical software package can be used for the informal model.

In essence, the informal model is like a factor analysis of informants' responses. Statistical software generates two kinds of data that are useful for assessing consensus. First, one compares the ratio of the first and second eigenvalues to ensure that a single factor solution is present, and consensus may be inferred if the ratio is greater than 3-to-1. Second, the first factor loadings for each informant in the dataset provide a measure of the extent to which the informant's responses correlate with the consensus responses. High scores indicate a close correlation with the model whereas low scores indicate that the responses of those individuals deviate significantly from the consensus model.

For rankings data, the factor scores provide a weighted average of the rankings, sometimes called the "answer key," which can be used in subsequent analyses. For example, researchers can test for relationships between the factor scores and variables such as age, ethnicity, marital status, wealth or other rankings data.

Depending on sample sizes, these data can be collected relatively quickly. During a recent study in Nicaragua, it required five days for 50 informants to rank 29 men on five separate characteristics. Whether or not there is consensus in the initial analysis, there are also methods to examine subgroup variation within the sample. During costly signaling research, for example, it might be worthwhile to test the possibility that there is greater agreement among women than among men. Provided there are sufficient sample sizes, informants can be divided into subgroups, at which point consensus analysis can be conducted on the separated samples.

In a 1986 *American Anthropologist* article on Aguaruna manioc knowledge, James Boster demonstrated another method for investigating subgroup variation. In short, after subtracting the agreement attributable to the consensus model, Boster found that there was significant residual agreement shared by kin groups. Because the agreement data and the relatedness data are represented as matrices, this analysis requires some familiarity with the quadratic assignment procedure (QAP).

In summary, although consensus analysis has infrequently been used by evolutionary anthropologists, it may hold considerable promise for research on costly signaling theory. There is a wide variety of literature on the theory and methods of the consensus model, and interested readers should see Susan Weller's overview in *Field Methods* (2007).

Contributions to this column are welcome and may be sent to John Ziker (jziker@boisestate.edu).

General Anthropology Division

Luke Eric Lassiter, Contributing Editor

This month, Jonathan Marks offers a brief synopsis of the thinking behind his new book, *Why I Am Not a Scientist: Anthropology and Modern Knowledge* (UC Press, 2009). For those interested in the critical and interdisciplinary migration of ideas across the subfields, Marks provides great insight into evaluating scientific claims within larger streams of anthropological knowledge.

Why I Am Not a Scientist

By Jonathan Marks (UNC Charlotte)

Biological anthropologists are the custodians of the scientific narrative of who we are and where we come from. Yet, as some form of "anthropology," we are also charged with promoting respect for, or at least trying to understand, other ways of seeing the world. My interests lie in establishing and exploring the intellectual connections between biological anthropology and, well, the rest of anthropology. Race is one such connection, ancestry is another; more broadly speaking, science itself is yet a third.

Biological anthropology is anthropology's primary connection with science, but that connection is often quite instructively paradoxical. Students may or may not be satisfying a "science" distribution requirement for taking that biological anthropology course. Students may learn that there is a recipe for doing science—"hypothesis testing"—but may not appreciate that the Human Genome Project got on quite well as science without testing a hypothesis. The most significant paradox of science to me is the fact that it is, and always has been, more scientifically respectable to be a racist than to be a creationist. The racist can occupy a distinguished place in science, but creationists are, by their very nature, on the outside of science looking in.

To my mind, that's backwards, at the very least. People who give science a bad name by using it to support odious political ideologies are the ones who should be on the outside of science looking in. It's not like I have any special sympathy for creationists; it's just that I don't think either of them should be able to speak with the cultural authority that science, as a system of reliable knowledge production, has earned over the last few centuries. The basic tenets of scientific racism have been shot down in the scholarly community as consistently as those of young-earth creationism. So why should the former be more be more acceptable than the latter?

The perseverance of scientific racism is one theme that runs through my new book. To me, it is an aspect of a larger basic question: When can't you believe everything a scientist says to you? Scientific fraud represents another aspect of that question. Fraud is interesting for the simple reason that it represents a subversion of accepted behavioral norms; yet the scientific community itself has tended to deny that it needs any more than a casual system of self-policing, for fraud is rare and pathological. Acknowledging that scientific fraud is structural might have the consequence of eroding the preeminent position of science as a voice of cultural authority in the modern age. But on the other hand, only a moron would take everything anyone says in the name of science at face value.

We all have criteria for assigning chunks of science into categories of what we accept, what we