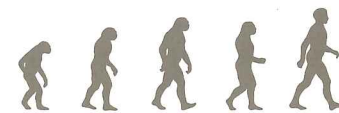


AnthroQuest



The Newsletter of the L.S.B Leakey Foundation

No. 4, Fall 1997

Quantitative Ethnography and the Study of Human Social Behavior

By Rebecca Bliege Bird, Eric Alden Smith, and Douglas W. Bird

Rebecca and Doug Bird are postdoctoral associates, and Eric A. Smith is a professor, in the Department of Anthropology at the University of Washington. They are currently collaborating on an NSF-funded research project investigating the links between foraging and reproductive strategies among the Meriam, inhabitants of a small volcanic island on the northern Great Barrier Reef. The Birds have also received support for past research from the Leakey Foundation.

Sociocultural anthropologists have long struggled over acquiring reliable knowledge about human social behavior, particularly when it involves crossing cultural boundaries. In recent years many cultural anthropologists have given up on this goal, denouncing the search for scientific understanding of society and culture as ill-conceived, imperialistic, and impossible. But others have taken a very different approach, focusing their efforts on assembling detailed and quantitative information about the societies they study, with the goal of using these data to test explicit hypotheses about why human behavior varies. In order to quantify patterns of behavior more precisely, it is necessary to limit the scope of observations and isolate findings within their complex context. Why should anthropologists risk reducing the richness of ethnographic description in favor of increased precision?

Quantitative ethnographic research over the last two decades has answered this question by testing hypotheses about how human responses to social and physical environments have been shaped by ecological and evolutionary factors. In the era of postmodern cul-



Doug Bird, Rebecca Bliege Bird, Eric A. Smith
tural studies, this new research tradition of “human behavioral ecology” (HBE) has become the main enclave of scientific ethnography (the detailed study of particular societies and cultures). Not coincidentally, HBE has established strong links between ethnography and other subfields of anthropology (including biological anthropology and archaeology) at a time when the anti-science direction of sociocultural anthropology has brought the unity of the discipline into question. But enough of the broad intellectual context—what has HBE actually accomplished?

Two on-going studies, both supported in part by the Leakey Foundation, immediately come to mind as outstanding examples of quantitative ethnography: the Ache project in Paraguay initiated in 1980 by Kim Hill, Magdalena Hurtado, Hillard Kaplan, and Leakey Foundation SEC member Kristen Hawkes, and currently being continued by Hill, Hurtado, and their students from the University of New Mexico; and the Hadza project in Tanzania conducted by Nicholas Blurton-Jones of UCLA and Kristen Hawkes and James O’Connell from the University of Utah.

The Ache project began with attempts to answer questions about variation in human foraging strategies. This

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Notes from the Field: Paternal Care Among the Hadza of Tanzania

By Frank Marlowe

Frank Marlowe, a doctoral student at the UCLA under the supervision of Dr. Nicholas Blurton-Jones, was awarded funds to aid field research on the study of paternal care among the Hadza, a contemporary foraging society in Tanzania. By measuring the amount of time Hadza men spend interacting with children and gathering food as well as the amount and type of food that the men acquire, Marlowe’s goal is to find out whether variation in effort of Hadza men is shaped by variation in opportunities to promote their social and sexual success or to promote the survival of their children. This innovative study may shed light on the foraging tactics of our ancestors.

Paternal care plays an important role in many scenarios of hominid evolution. It has often been argued that big-brained and helpless hominid infants required more care than a mother could provide on her own, and that this led to long-term pair-bonds. Certainly, the amount and type of care provided by males should influence the mating system. My research looks at what, if anything, males provide children, and how this is influenced by potential benefits from parenting and mating effort.

To investigate this question, I lived with the Hadza of Tanzania for one year. The Hadza are one of the last remaining foraging societies in the world. They live in a wooded area not far from the Serengetti plains and Olduvai Gorge. There are only about one thousand Hadza, one third of whom still live exclusively by foraging. They gather roots, berries, baobab, and honey. Men use bows and arrows to hunt everything from dik diks to buffalo.

I conducted hourly scan observations to record what everyone in camp

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President's Message: Autumn Update

November 1997

Dear Members:

Another academic year is in progress and we at the Foundation are caught up in the usual Fall bustle of activity. Earlier this year we were informed that our current office space in Oakland's Jack London Square had been slated for demolition. While the idea of being forced to move was unwelcome initially, we feel most fortunate to have leased space in a complex of nonprofits in San Francisco's Presidio. Our relocation to the new office space is scheduled for November 1. We hope that this change of location will serve as a positive new direction for the Foundation by allowing us to become more accessible to many of our members and affiliated scientists. Please take note of our new address information: P.O. Box 29346, Presidio Building 1002A, O'Reilly Avenue, San Francisco, CA 94129, phone: (415) 561-4646, fax: (415) 561-4647.

The Fall granting cycle is in full swing with another slight increase in the number of applications received this year. Once again, I am thoroughly impressed with the grant review process. For those of us not directly part of the review process, the level of planning involved may not be immediately apparent—we see the end result in the form of discoveries and refinements in methods of scientific inquiry, but, like a well-orchestrated play, we are not aware of all the work that goes on behind the



scenes. I would like to call your attention to the amount of time and effort contributed by both our own Scientific Executive Committee and other scholars around the world in assessing the relative merits of each grant application. We receive proposals for research projects in a broad spectrum of disciplines which advance our understanding of hu-

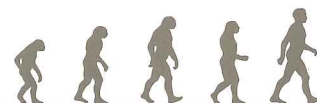
man origins, from paleontology to morphology, archeology to evolutionary genetics, geology to primatology. Expert reviewers in each of these disciplines (and more!) make it possible for us to award funds to the most promising researchers. Soliciting comments from a wide range of specialists helps us to uphold our commitment to keeping the grant review process fair and objective. We are so grateful to all of the individuals who contribute to this endeavor.

We have a full calendar of events this year for which we hope you will join us including the upcoming December symposium at Stanford on the relevance of primate behavior to our evolution. Lectures and symposia sponsored by the Foundation provide opportunities for educational enrichment on the most exciting advances in human evolutionary research. We encourage you to take advantage of some of the upcoming events that we sponsor to learn more about the latest developments in the fascinating study of our origins.

Sincerely,



Kay Harrigan Woods
President



The Leakey Foundation

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Understanding Great Apes,
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Quantitative *continued from page 1*

issue was investigated by comparing some predictions of optimal foraging models with quantitative data on Ache prey choice, grouping patterns, and food sharing. While much of Ache foraging behavior was predicted by a simple energetic optimization model, the data revealed some interesting deviations. Of particular importance was the difference in prey choice between Ache males and Ache females. Both males and females sometimes chose to pursue prey that were not the most energy efficient, yet their choices were biased in patterned ways: men passed over palm starch in their search for game, while women generally displayed the opposite preference. Clearly, factors other than those predicted by the prey choice model were influencing Ache foraging decisions. These findings led to a number of hypotheses about why men's and women's foraging behavior varied. Hill and Hurtado proposed that the discrepancy was caused by reproductive differences between

men and women—particularly the constraints faced by women as they attempted to combine child care and foraging. They tested this hypothesis by comparing sex differences in foraging behavior and child care constraints between Ache and Hiwi (another South American Indian group who live in the Venezuelan savanna rather than the Paraguayan forest), and found that women in both groups tended to focus on the most efficient foraging activities that were compatible with child care. Hill also proposed that men's foraging strategies aim to increase protein harvests rather than maximize calories. Thus, in this view gender differences in foraging are complementary, and generally aimed at best provisioning offspring.

Taking an alternative position, Hawkes argued that men and women sought different benefits from foraging. She used data collected among both the Ache and Hadza (hunter-gatherers in Tanzania) to test hypotheses about the

benefits obtained from hunting, gathering, and sharing. Her findings indicate that hunting of large game is not a reliable way to provision offspring, both because such resources are widely shared outside the family and because hunts frequently fail. As an alternative, Hawkes hypothesized that men prefer to acquire resources they know will be widely shared because this gives them social status, which might bring increased mating opportunities.

Both lines of inquiry have provided us with a generous supply of testable hypotheses about human behavioral variability, and have spurred a wealth of additional research aimed at testing

these same hypotheses and alternatives in other human societies. While not yet resolved, this research question has important implications for theories of hominid evolution as well as contemporary gender politics.

Anthropology is awash in qualitative statements and observations of un-

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was doing every day. To measure paternal care directly, 30 minute focal follow observations were done throughout the day, and after dark, on each man with small children in his household, noting the number and types of interactions he had with them. I also weighed all resources brought into camp. I went hunting with each man I was focusing on to record how he spends his time on walkabouts. In addition, I interviewed adults in camps to get their strategies. For example, I asked why people divorced, what happens if affairs are discovered, what people think is important in a mate, who the best hunters are, what is expected of a step-father, and who the natural fathers of the children in camp are.

Whether a man is the natural or step-father of a child is an important variable in my study, since men ought to be investing more in their own chil-

dren if the care they provide is really parenting effort, rather than the price of mating access. Another important variable is camp size since there ought to be greater mating opportunities in large camps. For this reason, I lived in 6 camps, ranging in size from 12 to



Frank Marlowe and Hadza children

110 members. I have data on a total of 240 people, including 33 fathers, and 10 step-fathers.

The Hadza are aware of their special status as one of the last "People of the Bow," and like to drive a hard bargain with visitors, whether anthropolo-

gists, missionaries, or the occasional tourist. Though I eventually learned how to bargain, I'm sure the gifts I gave at the end of my stay in each camp have now raised the going rate. Deciding what sort of gifts to give which won't fundamentally alter things isn't easy. For example, food would have altered the very foraging behavior I'm measuring. But the gifts are well deserved. The Hadza welcomed me completely. They never complained about my constantly watching their every move from dawn until well after dusk and my prying into their most private matters. I am deeply indebted to them.

There were many struggles: constantly patching up my little tent, which was being ravaged by the wind and rain, so as to keep out the mosquitoes; going a month without a bath to conserve water, which almost disappears in the dry season; tolerating sweat bees buzzing in my ears in the mid-day

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known reliability or significance. If our goal is to understand why human behavior varies in patterned ways, we must employ scientific methodology to test alternative hypotheses against comparable data from a number of different societies. It is impossible to do this with any precision using qualitative data. Even systematic tabulations of this information, such as the Human Relations Area Files or the *Ethnographic Atlas*, provide few scientific ways for comparing behaviors between groups in order to test hypotheses about why variability exists. Imagine, for example, trying to test the alternative hypotheses about sex differences in Ache foraging with only qualitative statements—hearsay, essentially—that men hunt and women gather.

Quantitative data on human behavior thus allows us to analyze ethnographic topics in a rigorous manner, and gives us more detailed knowledge of particular behaviors and how they vary. Such knowledge is important not only because it is directly comparable and suitable for hypothesis testing, but also because it can be useful to the communities in which it is collected; quantitative data on foraging patterns can be used to document territory for land claims issues, for example. Such issues will become increasingly important as indigenous societies become ever more closely tied to global economies.

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heat; trying to speed-read a medical manual before choosing the appropriate medicine to give someone with a medical emergency; or just being on my own and going a month without speaking or hearing a word of English. But it was well worth it.

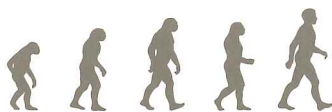
The Hadza may not be foraging much longer. Their pastoralist and farming neighbors keep encroaching, depleting the resources that sustain the wildlife. Hunting the few remaining animals is becoming difficult. I am grateful to have had the opportunity to conduct my study before it was too late. I only hope that I can return to continue working with the Hadza in the future.

Calendar of Events

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| 1997 | November 3 | Lecture by Dr. Kristen Hawkes * “Grandmothers, Menopause, and Human Evolution” California Academy of Sciences, San Francisco, CA |
| | December 5 | Board of Trustees Meeting, Stanford University Granting Session |
| | December 6 | Symposium, Stanford University * “Apes and Ancestors: Primate Behavior and Hominid Evolution” Dr. Filippo Aureli, Yerkes Regional Primate Center, Emory University Dr. Marc Hauser, Harvard University Dr. Kevin Hunt, Indiana University Dr. Craig Stanford, University of Southern California |
| 1998 | February 19 | Executive Committee Meeting, San Francisco, CA |
| | February 19 | Annual L.S.B. Leakey Lecture* California Academy of Sciences, San Francisco, CA Dr. Bernard Wood, George Washington University |
| | April 24 | Board of Trustees Meeting, San Francisco, CA Granting Session |
| | April 25 | Leakey Prize Award, San Francisco, CA Honoree(s) to be announced |
| | May 24 - June 10 | Tour of Turkey Istanbul, the Anatolian Plateau, and the Turkish Mediterranean |
| | October 9 - 10 | Board of Trustees Meeting, Washington, DC |

*Open to all members

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