

New Views Emerge on Hunters and Gatherers

A very simple but persuasive model of hunter-gatherer life dominated anthropological thought for two decades, but is now being replaced as challenges come from several directions

THE Bushmen of the Kalahari Desert have long been the subject of Western fascination and attention in the realms of science, natural history films, and raw politics. One group of Bushmen, the !Kung who live in the northwest region of the Kalahari, occupy a special position in the Western anthropological cosmos: for almost two decades—during the 1960s and 70s—they represented what it was to live the technologically primitive existence of hunting and gathering.*

The documentation of the daily life of the !Kung, accumulated during a long study organized from Harvard University, revealed in unprecedented detail the socioeconomic strategy of a hunter-gatherer society. So impressive was the study that the !Kung in effect became *the* hunter-gatherer society. In addition, two further lessons were inferred from this simple foraging economy as exemplified by the !Kung. First, it was thought to tell us something about the basic fabric of modern humanity. And second, it was perceived as a window onto the past, showing how our ancestors lived before the advent of agriculture some 10,000 or so years ago.

Now, however, perceptions about the lessons of the !Kung have changed dramatically, splaying in several different directions as they developed. This shift is being driven partly by new ethnographic data (on the !Kung and other hunter-gatherer groups), partly by new theory and research in behavioral ecology, and partly by philosophical and practical developments among anthropologists.

For instance, Irven DeVore of Harvard University acknowledges that “We were being a bit romantic.” DeVore was co-leader of the !Kung project with Richard Lee, who is now at the University of Toronto. “Our assumptions and interpretations were much too simple, but that was probably inevitable given the social and intellectual context within which we were working.”

DeVore is now enthusiastic about the

application of new conceptual and empirical approaches in behavioral ecology to human foraging societies: “We are now on the threshold of being able to incorporate studies of humans—especially foraging humans—into the larger corpus of vertebrate behavioral ecology.” In this context, the !Kung project of the 1960s and 1970s was a harbinger of this scientific, evolutionary approach to studies of hunter-gatherers.

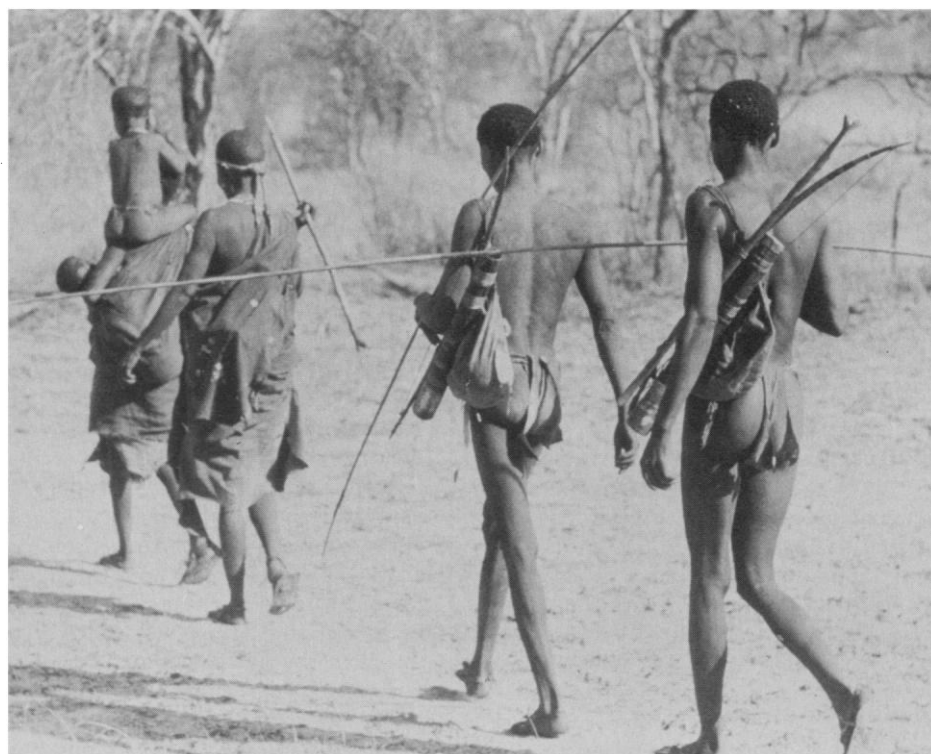
Nancy Howell, of the University of Toronto and a former member of the !Kung project, is more critical, claiming that DeVore, Lee, and their colleagues were seeking a “pristine” hunter-gatherer society for their study, and were effectively closing their eyes to evidence to the contrary. At the recent annual meeting of the Society for American Archeology she said: “The demography of the !Kung, despite my greater claims to the contrary in a book of that title, is no more

likely to produce insights on human evolution than a careful study of the population of any other noncontracepting group, certainly not more likely than any other hunter-gatherer group.”

Howell’s criticism derives in part from a recognition of the great difficulties faced by anthropologists in the field, namely in a short time having to learn a new language and then tease out subtleties of meaning through interviews. Confidence in ethnographic studies should therefore be tempered by caution. But Howell’s remarks relate also to the viewpoint that however pristine a hunter-gatherer society might look in the present, it has surely been influenced significantly by other, nonforaging, groups in the historical past, thus limiting any generalities one might like to infer. This viewpoint is known in anthropological circles as historical particularism.

The effect of these various lines of thought has been to transform what once was a simple picture—or rather, a series of pictures—into something much more complex. For instance, anthropologists now recognize a much greater variability among foraging groups, a recognition that derives in different ways and with different implications from studies in both social and biological anthropology.

In addition, the !Kung model of the foraging lifeway—small, nomadic bands—is no longer taken as stereotypical of preagri-



!Kung in action. The !Kung project showed that, although meat is a prized food item, plant foods provided most sustenance.

*The “!” preceding the word Kung denotes a “click” sound in the !Kung language.

cultural human societies. As a result the notion of a revolutionary transition from a simple hunting and gathering existence on one hand to a complex agricultural community on the other has been overturned (see Research News, 20 May, p. 984).

The Harvard project very quickly gathered data that appeared to contradict the prevailing view of hunters and gatherers. "Prior to this they were, in prehistory, tenuously clinging to survival until the invention of agriculture brought their tedious and hazardous life to an end, and, in ethnography, the marginal people of anthropological research," says Cambridge University's Robert Foley. DeVore and Lee had shown that the !Kung were able to satisfy their material needs with just a few hours work each day, their effort being divided between male hunting and female gathering of plant foods.

These data, and the observation that !Kung society appeared to be one of sharing and peaceful harmony, were presented at the now landmark meeting titled "Man the Hunter," held at the University of Chicago in 1966. Although anthropologists presented data on other foraging groups, many of which did not at all fit the !Kung pattern, the !Kung model came to dominate as the paradigm. The conference, and the volume that followed it, "restored hunter-gatherers to their current position as Rousseau's 'noble savages' and Sol Tax's 'original affluent society'," says Foley.

At that conference DeVore and Lee asked rhetorically whether the !Kung were typical of hunter-gatherers in general, and whether they represented a preagricultural lifeway. The answer was, Yes to both questions. Moreover, Lee later took the sphere of inference outside the realm of science. "A truly communal life is often dismissed as a utopian ideal," he wrote in a monograph on the project. "A sharing way of life is not only possible but has actually existed in many parts of the world and over long periods of time."

The cases were persuasive for several reasons. "The Harvard team set a new standard of empirical research," says Richard Gould of Brown University. "They addressed ecological evolutionary questions in a way that no one else had before. It was therefore reasonable to see the !Kung model emerge as it did." Kristen Hawkes of the University of Utah agrees with this assessment, but adds that the social context of the 1960s also played a part. "It presented a vision of a better world, a sharing, antimaterialistic world."

DeVore acknowledges this as "fair comment," and says that investigators are always a product of their times. "There can be little

Past Perspectives

In their classic 1968 volume *Man the Hunter* (see main story), Irven DeVore and Richard Lee made the following statement: "Cultural man has been on earth for some 2,000,000 years; for over 99% of this period he has lived as a hunter-gatherer. . . . Of the estimated 150 billion men who have lived out a life span on earth, over 60% have lived as hunter-gatherers."

Scientific perceptions change, of course, and in a recent essay Robert Foley of Cambridge University, England, tested how this statement has stood up, specifically addressing two issues: "first, the extent to which anatomically modern humans may have differed from other hominids; and second, the extent to which hunter-gathering, as understood by studies of living hunter-gatherers, was the way of life of all nonagricultural peoples."

By the phrase "cultural man," DeVore and Lee had in mind toolmaking hominids, and their assumption was that tools implied hunting. In the 2 million or so years since tools first appeared in the archeological record hominids have increased in body size and in brain size, with anatomically modern humans scoring highest in both categories. It may be that these morphological increases were associated with a gradual "improvement" in a basic hunter-gatherer existence, as implied in 1968 by DeVore and Lee. But more recent archeological analysis indicates that true hunting and gathering—as characterized by division of labor, food sharing, and central place foraging—is a rather recently emerged behavior. In other words, "the evolutionary ecology of earlier hominids and modern *Homo sapiens* was markedly divergent," which is at variance with the model implied by the DeVore and Lee statement.

Anatomically modern humans appear to have evolved at some point between 200,000 and 100,000 years ago, whereas sedentism and agriculture developed much more recently, some time before 10,000 years ago, which time coincides with the end of the Pleistocene ice age. Foley asks whether the modern humans of the end Pleistocene were the same as those in the post-Pleistocene, and finds the answer to be, No. "Two trends are of particular interest," he notes; "reduction in body size and changes in sexual dimorphism."

Both males and females of recent times are smaller and less robust than in the late Pleistocene. However, the difference between male and female body size—sexual dimorphism—is less marked in more recent times than earlier. Clearly, there were significant morphological changes *after* the origin of modern humans, which, says Foley, are often not addressed in thinking about behavioral comparisons. Traditionally, hunting and gathering, as seen in contemporary foragers, is viewed as being ancestral to sedentism and agriculture. But it may be that these morphological differences imply behavioral differences between the earlier modern humans and the later modern humans.

"High levels of sexual dimorphism and robust males are considered to reflect one or both of two principal selective pressures," says Foley. "Either there may be considerable male-male competition for females, and hence a selective advantage for larger males, or males and females may have different foraging strategies, in which case males may be called upon either to cover larger distances or employ considerable strength in foraging." What does this imply for recent human history? "During the late Pleistocene the foraging strategies of males and females may have been quite different from those of modern hunter-gatherers, reflecting a much greater level of hunting, and in particular the hunting of very large mammals," says Foley. "The picture beginning to emerge is one where males are responsible for large proportions of the foraging, and are provisioning/sharing with females and young."

With the end of the Pleistocene, the change in body size and sexual dimorphism presumably reflects a shift in subsistence strategy, moving toward a greater emphasis on plant foods and a concomitantly much more egalitarian system such as is seen among some contemporary hunter-gatherers. "In this context," says Foley, "what we think of as modern hunter-gathering is a largely post-Pleistocene phenomenon. Rather than being an adaptation ancestral to food production, it is a parallel development. . . . Both hunter-gatherer and agricultural systems developed as a response to resource depletion at the end of the Pleistocene from the rather different socioecology of Late Pleistocene anatomically modern humans." ■ R.L.

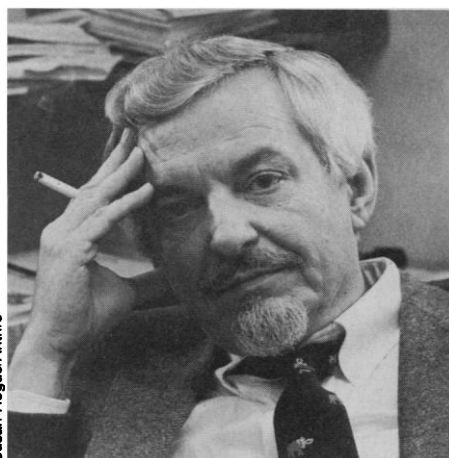
doubt that behind most anthropology there is a motivation to find lessons for humankind," he told *Science*. "Margaret Mead was a classic example, bringing lessons for American adolescent girls from her observations in New Guinea. We were guilty to some extent I'm sure. But most of us have gone beyond that now."

Hawkes and her colleagues are now studying foraging peoples in Africa and South America, projects whose intellectual base was firmly set in the scientific, evolutionary approach of the !Kung work. It was not long before the lessons of the !Kung were seen to be at variance with Darwinian theory. "Rather than learning the lesson of variability, which is what you'd expect with different peoples' responses to different ecological conditions," says Hawkes, "the !Kung model had replaced one generalization with another, each of which was poorly founded."

Variability is now what Hawkes and her colleagues—and others engaged in a biological anthropological approach—are seeing among the people they are studying. It is an economic and cultural variability predicated upon ecological differences, an interpretation with which not all anthropologists would be sympathetic.

Although the modern evolutionary approach is critical of the initial interpretations of the !Kung, it is at least played in the same intellectual ballpark. Not so with a second line of criticism, that of historical particularism. An approach that has been in the ascendant for a decade, historical particularism insists that modern peoples can be understood only in the detailed context of historical experience; and no group has been immune from such experience.

Attacking the DeVore/Lee evolutionary position, Carmel Schrire of Rutgers University said: "Scholars imagine themselves as standing on the interface of past and



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present, watching former hunters teetering on the cusp as they hurtle into modernity with no previous experience of change and no lessons gained from the past." In other words, Schrire and like-minded anthropologists say that what you learn from studying particular cases is the outcome of long, complex experience, and not anything that can be generalized widely, particularly not across the millennia into preagricultural society.

"In this context much of the traditional Kalahari work can appear almost hopelessly old-fashioned and out of date," says John Yellen, an anthropologist with the National Science Foundation and a former member of the !Kung project. He accepts that the !Kung are not totally faithful representatives of preagricultural foragers, but questions whether this necessarily means "that they cannot provide insight into such a condition."

Yellen would like to deflect the historicist's challenge by arguing that it is not an issue of either one approach or the other.

"Rather than understanding the past through the study of the present, the historicist goal is the very different one of 'elucidating the present in terms of the past,'" he says. "The confrontation between the 'historical' and the 'traditional' or 'evolutionary' approaches becomes less direct and dissolves, for the most part, into the unanswerable question of which alternate (and not necessarily conflicting) goal is most worthy of anthropological pursuit."

When the classic !Kung model was formulated, it both fitted into and strengthened prevailing notions of preagricultural society. Specifically, this was that before the advent of agriculture people foraged in small, nomadic bands. Only with agriculture did people establish settled communities and elaborate sophisticated social and cultural structures. In the post-!Kung era it has become clear that the Neolithic Revolution was not a transition from the simple to the complex, from nomadism to sedentism.

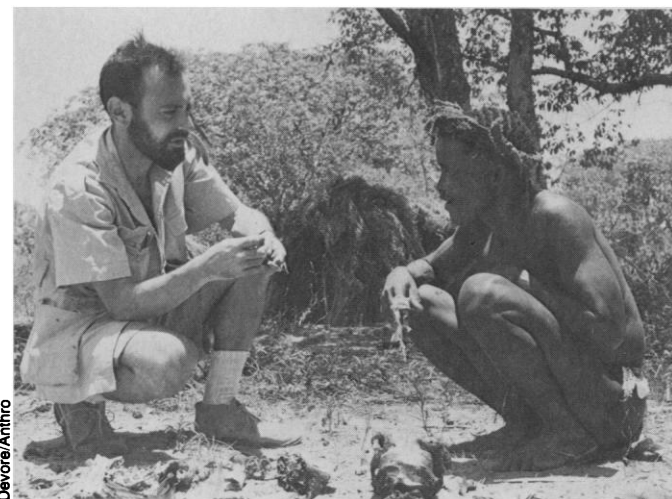
This realization began to build in the late 1970s and crystallized in the mid-1980s, particularly with the publication of a conference volume, organized by James Brown of Northwestern University and Douglas Price of the University of Wisconsin. "It began to be obvious from my archeological fieldwork in Denmark that you couldn't explain the density and variety of material I was seeing in terms of small, highly mobile bands," Price told *Science*. "Jim Brown was coming to similar conclusions from his work in the lower Illinois Valley, so we decided to try to pull this kind of work together."

The project clearly showed that many foraging societies throughout the globe did not fit the !Kung model, that there could be social and economic complexity in the absence of agriculture. Complexity, not simplicity, is now the term associated with preagricultural foraging peoples. The simple categories—either nomads or agriculturalists—have gone.

But the interesting thing about the development of the new paradigm is that some of this information was available at the time of the establishment of the classic !Kung model. In fact, some of it was presented at the famous "Man the Hunter" conference. Some was present in the known archeological record, in the form of extensive settlements long before the beginnings of agriculture.

"Much of this was ignored, or at least conveniently overlooked," says Gould. "The !Kung had an immediacy. They were there, alive, to be studied in action. Most of the more complex foraging groups were people known only through the historic record. That's much less satisfying to study." ■

ROGER LEWIN



Interview

Richard Lee talks with a !Kung man about hunting tactics and success.