

# Introduction

## !Kung ecology and society

**T**HIS book is an ecological and historical study of the !Kung San of Botswana, one of the very few remaining peoples of the world who live as hunters and gatherers. Based on 3 years of fieldwork among the !Kung, the study presents a description of the dynamics of their hunting and gathering way of life in what proved to be the last decades of its independent existence. The discussion draws heavily upon three theoretical traditions in social science: the anthropological school of cultural ecology founded by Julian Steward; the Marxist framework of historical materialism, particularly the French school of Maurice Godelier; and ecological systems theory.

Before the theoretical and methodological bases of the approach are discussed, it is necessary first to consider why the hunting and gathering societies are important for social science.

### THE SIGNIFICANCE OF THE HUNTER-GATHERERS

Peoples who live by hunting and gathering – Inuit (Eskimo), Australian aborigines, the Kalahari San – are among the few remaining representatives of a way of life that was, until 10,000 years ago, a human universal. Basic human social forms, language, and human nature itself were forged during the 99 percent of human history when people lived in hunting and gathering camps. Our contemporary societies of cities, states, and empires, of literature, science, and technology are all developments of the last few thousand years of agriculture and settled village life. The contemporary hunter-gatherers, therefore, have much to teach us, but we must proceed with extreme caution to avoid misusing or misreading the lessons they offer. The hunters are not living fossils: They are humans like ourselves with a history as long as the history of any other human group. It is their very humanity that makes them so important for science. These peoples, despite cultural and geographical diversity, have

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a core of features in common, and this core of features represents the basic human adaptation stripped of the accretions and complications brought about by agriculture, urbanization, advanced technology, and national and class conflict (Lee 1974: 167–8).

Although our ultimate goal is to use data on hunter-gatherers to illuminate human evolution, we must acknowledge that nowhere today do we find, in Sahlins's apt phrase, hunters living in a world of hunters. All contemporary hunters are in contact with agricultural, pastoral, or industrial societies and are affected by them. Therefore, the first order of business is carefully to account for the effects of contact on their way of life. Only after the most meticulous assessment of the impact of commercial, governmental, and other outside interests can we justify making statements about the hunter-gatherers' evolutionary significance.

## CULTURAL ECOLOGY

The core of common features that unites these peoples centers on their distinctive way of making a living—the techniques, knowledge, and organizational features whose sum total we call the hunting and gathering, or foraging, way of life. Ever since the pioneering research of Julian Steward (1936) on the social and economic basis of primitive bands, modern anthropology has seen the hunter-gatherer adaptation as one of the primary socioeconomic forms of human society. It is treated as such in the great majority of anthropological textbooks, and various authors have emphasized the logical and evolutionary priority of its organizational forms (e.g., Lévi-Strauss 1949; Steward 1955a; Service 1962, 1966, 1971; Lee and DeVore 1968), its systems of exchange (Sahlins 1972), technology (Oswalt 1973), or demography (Cohen 1977).

Steward (1955b) developed an approach to these societies based on study of the core features that he christened the method of cultural ecology and that he extended to include the study of tribal, peasant, and industrial societies in addition to hunting and gathering bands (Steward 1949, 1956, 1967). Steward's cultural ecology provides a framework of analysis that has some claim to being at once materialist, historical, and evolutionary and that has been widely influential in contemporary anthropology (Leacock 1954; Sahlins 1958; Wolf 1959; Service 1962; Fried 1967; Harris 1968, 1975; Damas 1969a,b; Leacock and Lurie 1972). It focuses on the core features of subsistence, economics, and technology, and attempts to understand social and political organization and other aspects of culture in terms of this core. Cultural ecology is not a brand of environmental determinism. Steward and his successors have specifically pointed to an *interplay* of environmental, social, economic, and cultural factors in determining the form of a given society. Nor is cultural ecology a form of economic determinism; Steward also noted that

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not all the features of a culture can be explained by the ecological method. Certain aspects he attributed to history, by which he meant factors peculiar to the history of a particular culture and not generalizable to all cultures sharing the same set of core features (1955b:36). Steward above all emphasized the importance of searching for and documenting observable regularities. The understanding of the broader trends of human social evolution would, he felt, emerge from the close analysis of the historical circumstances of individual cultures. It was necessary first to factor out the specific from the general in order to place comparative studies on a firm footing.

In short, two aspects of Steward's theory of society set it apart from the theories of his contemporaries: his insistence, first, on the importance of specific cases, and second, on the need to relate these to a general theory of social evolution. Franz Boas, the influential doyen of American anthropology during the period 1900–30, emphasized the analysis of specific cases, but firmly rejected even the possibility of an evolutionary synthesis (Boas 1911). Leslie White, the great proponent of modern evolutionism, presented a general theory of cultural evolution, but never put it in a form that could be tested systematically against the data of specific cases (White 1949, 1959).

Therefore, when we speak of *ecology* in Steward's sense, it is a shorthand for an approach with a much broader meaning. Cultural ecology anchors the study of human society in the natural world as a starting point, but it includes, in addition to subsistence, nutrition, and climatology, the study as well of demography, technology, energetics, economics, and a wide range of cultural behaviors.

### MARXISM

The Stewardian method, however, has certain shortcomings that render it incapable of arriving at a full understanding of a society in history. First, cultural ecology has achieved good results in making sense of a society's environmental adaptation, but has been far less successful in showing how social and ideological factors interact with ecological factors. Second, the culture core is an important construct for grouping institutions of technology and economics, but the structural interrelations within the core—between technology and organization, for example—are not specified in any detail. Third, despite Steward's allegiance to "history," his method does little to help us understand the processes of transformation a society may undergo through time. In one sense, *history* is a residual category for Steward, a catch-all for those aspects of a culture that *ecology* cannot explain.

To find a way out of this impasse and to provide a fuller understanding of a society in history, we can look seriously at Marx and Engels's theory

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of historical materialism. In the Marxist view, each historical epoch exhibits a distinctive cluster of features centered on a distinctive mode of production. Like the culture core, the mode of production is concerned with the primary links of society with its material foundation, but the latter goes much further than the former in specifying the relation between the elements within the core. The mode of production is subdivided into means and forces of production on the one hand (tools, techniques, resources, labor), and the social relations of production on the other (organization of work and ownership of means). In turn, this mode of production is related more precisely to the rest of culture. In Marx's words, it constitutes the base or "real foundation on which rises a legal and political superstructure, and to which correspond definite forms of social consciousness" (1859:137). Additionally, Marx and Engels developed a brilliant set of tools for understanding social and historical transformations. This aspect of their work has been particularly taken up by a new generation of French, Canadian and other Marxist anthropologists growing out of a structuralist tradition (Terray 1972; Meillassoux 1972, 1973, 1975; Godelier, 1973, 1974a, 1975; Friedman 1975; Beaucage 1977; Bernier 1977; Legros 1977).

Perhaps the greatest strength of Marxism is in the analysis of contradictions. Marx realized that the interests of individuals or groups in a society are never in complete harmony, but are always more or less in opposition. Contradiction and struggle, therefore, are constant aspects of society, and the working out of these contradictions, which is the very stuff of social existence, involves a dialectical process of feedback among all elements within a society.

My use of the concept of the dialectic here is a modest one. I specifically reject the metaphysical dialectics of Hegel (1830) and the same when it occasionally appears even in Marx's and Engels's own writings (e.g., some passages in Engels 1884; Marx 1867:I:763).

Yet I am struck by the fact that elements within a society (or within an individual) are constantly in process of adjustment and readjustment relative to one another, and these changes are not necessarily smooth and continuous, but may be sharp and discontinuous. Marx gave major attention to class contradictions as the primary ones in the period of history when society has been divided into classes. But contradictions appear in pre-class societies as well. Contradictions are an inevitable part of social life, and they exist both in observable reality and as part of the consciousness of human beings. In some ways my use of the concept of dialectic is rather close to the concept of feedback in systems theory. Both concepts refer to a process of adjustment between mutually dependent variables in a system. In fact, systems theory has a major role to play in the theoretical bases of this book.

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### SYSTEMS

Ecological systems theory (Margalef 1964; Levins 1966, 1968; Clapham 1973) and its application to human societies (Rappaport 1968, 1971a) provides us with a powerful tool of analysis. The !Kung San, like any other functioning society, are not just a haphazard collection of personnel and social and cultural elements. !Kung society is a complex web of systems, including ecological, energetic, demographic, and information subsystems, that are interconnected in intricate, mutually interdependent feedback relations (Rappaport 1968). This is not a sterile, mechanical set of systems reflexively acted upon by the environment, but rather a dynamic set of systems including physical and biological components in dialectic relations with conscious human actors. These humans make choices where they can and keep making adjustments to bring their lives into line with constantly changing ecological and human realities. If we understand the shape and interconnections of some of these systems in sufficient depth, we can go a long way toward revealing the underlying principles of the society. Examples of this kind of analysis are found in Chapters 9, 10, and 11 of this book.

Far from being incompatible, Marxism and systems theory come together in a field we could call *systems history*, after a phrase suggested by Mervyn Meggitt. Maurice Godelier, for example, has drawn attention to the important correspondences between the Marxist concept of contradictions and systems theory's notion of feedback:

In order to explicate the dynamic of systems and their history, it is necessary to develop the notion of contradiction and to distinguish several types . . . Cybernetics, in showing how systems can be regulated by feedback, has posed in new terms the problem of the existence of contradictions in physical and social systems. The mechanisms of feedback ensure a system's relative independence by relating the internal variation of its components to the external conditions of its functioning . . . The condition under which a system can reproduce itself is thus not an *absence* of contradictions, but rather one in which contradictions are *regulated* and this regulation maintains a *provisional* unity. [Godelier 1974b:55; emphasis in original]

One of the best ways to understand how a system works is to watch it undergoing transformation to another system. For example, my own understanding of the !Kung hunting and gathering system was deepened when I saw it being transformed into a farming and herding system (Chapter 14).

The goal of this research in theoretical terms is to understand what Godelier (1972:335–8) has called the inner dynamic or underlying logic of

a society. This inner dynamic is a set of principles that exists both in the base and the superstructure and that comprises a more or less logically consistent blueprint for living. The degree to which we succeed in uncovering the inner logic depends on the depth and rigor of our analysis of the society in the full complexity of its historical setting.

#### METHOD AND STRUCTURE

The main elements of the method used in this study can now be specified. It is a multidisciplinary approach that starts with a detailed description of the core features of !Kung life—subsistence, technology, group structure, land use, and work effort—and moves on from these to draw cultural, ideological, and political aspects of !Kung life into the analysis. Starting from this core, or base, I gradually build up a picture of the society by articulating, feature by feature, those aspects of the superstructure that make sense and are rendered intelligible in terms of the core. Another main dimension of the study draws upon the biological underpinnings of !Kung existence. The health and nutritional status of the people, the chemistry of their food, their climatic adaptation, their energy budgets, and their reproductive physiology are aspects of biology that affect their culture core and are affected by it. The third dimension of the study is the historical one. By long-term fieldwork and by maximally extending the time dimension, we can begin to place this “ahistorical” society into history to get a sense of its trajectory in historical materialist terms as a foraging society on the threshold of a triple transformation to agriculture, to feudalism, and to capitalism (cf. LeRoy Ladurie 1960, 1976).

A critical focus concerns the roles men and women play in !Kung society. The study of the relative contributions of the sexes to the tasks of subsistence, tool making, housework, and child rearing allows us to inquire into the fundamentals of the human division of labor (and power) in a social setting remote from the hierarchically organized, industrialized, urban, class societies of the West.

This social and cultural study spills over into related fields; it draws heavily upon the natural sciences while at the same time seeking the historian’s sense of time and movement. The method incorporates elements from social and physical anthropology, ecology, economics, demography, nutrition, and history. Here are some of the main features:

1. Long-term fieldwork by participant observation using the !Kung language, to collect a broad range of ethnographic data
2. Systematic quantitative collection of core data on population, botany, economics, nutrition, and demography
3. Delineation of critical systems and subsystems and the tracing

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of their interrelations (the work of specialists in medicine, demography, and child-rearing studies is important here)

4. Analysis of internal variation by sex (as well as by age and geographic region) in key variables and the pinpointing of causes.

5. The plotting of year-to-year, and decade-to-decade, variations in ecology, resources, and group dynamics

6. The placing of the Dobe area !Kung into the broader historical and regional context of southern African history and development from 1870 to 1980

7. The detailed study of the conscious and unconscious beliefs, values, and attitudes by which the !Kung organize and make sense of the world and which in turn motivate their behavior; the pinpointing of key contradictions

These seven main elements of method combined with the ecological and evolutionary goals of the research dictate the topics to be covered and the structure of the book before you.

After an introduction to fieldwork among the San in Chapter 1, Chapter 2 reviews the terminology by which the San are known and their current status. Chapters 3 through 8 present core data on group structure, ecology, technology, and subsistence. Chapters 9 through 13 represent analyses of critical systems and subsystems: work effort, nutritional stress, reproduction and birth spacing, land use, and the management of conflict. Chapter 14, along with parts of Chapters 3 and 12 attempts to provide the historical context, and Chapter 15 summarizes the lessons of the !Kung for anthropology and social science.



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## Fieldwork with the !Kung

WHAT is it that separates the enterprise of the scientist from that of the poet or novelist? Both are seekers after knowledge, but unlike the poet, a scientist must subject his findings to the tests of the scientific method. If a set of observations can survive the scrutiny of the agreed-upon canons of the community of observers, the material passes from the realm of the inspired guess or poetic truth into the realm of what we like to think of as data about the world as it is.

But knowledge of the human world is mediated by two further intervening variables. First, the observing scientist does not stand in completely objective relation to the people studied. Modern anthropology no longer believes that the scientist of culture is neutral; today's epistemology includes the *observer along with the "natives" in the field of view*. When acknowledged and used creatively, the observer's likes and dislikes, his prejudices and enthusiasms, become an instrument of discovery, a part of the learning process itself and not external to it. Second, the "natives" themselves are far from neutral in this enterprise. What image *they* present to the observer may spring from their collective vision of who they are and who they take the observer to be.

The ethnography that results from this encounter of two realities is not a photograph mechanically reproducing a portrait of a people, but rather a dialectic of congruent and contradictory elements between observer and observed. It is only in recent years that the full complexity of this interplay has become apparent to practicing social scientists.

Much of this book is an account of the !Kung as they are (or were) and of the process of discovery by which a multitude of observations has been built up into a coherent picture of the external workings and underlying reality of this foraging society. But before beginning, the reader should have a brief accounting of the other side of the equation – of the observer himself and the history of his relations with the people. The account to follow details the !Kung fieldwork as it unfolded from 1963 to 1973 and



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traces the mutual impact of the researchers on the lives of the !Kung and of the !Kung on the lives of the researchers. The goal is to convey the experience of fieldwork.

As an undergraduate majoring in anthropology and philosophy at the University of Toronto in the late 1950s, I became interested in Africa and in cultural evolution through contact with Ronald Cohen, and in biological evolution and the philosophy of science through work with Robert C. Dailey. A paper (“Primate Behavior and the Origin of Incest”) I gave at the 1960 meeting of the American Anthropological Association led to a meeting with Sherwood Washburn and Irven DeVore and an invitation to study primate behavior with them at the University of California, Berkeley. Soon after settling in Berkeley, I realized that my long-term research interest lay in studying people, not primates. My hunch was that research on contemporary hunter-gatherer groups—subject to critical safeguards—could provide a basis for models of the evolution of human behavior.

Happily, Washburn and DeVore were enthusiastic about this approach, and they encouraged me to plan fieldwork with a contemporary hunter-gatherer group.

Also while at Berkeley, I was introduced to the work of Julian Steward and others on the Great Basin and Californian hunter-gatherers through courses with Robert Murphy and R. F. Heizer, as well as to the work of the zoologists H. G. Andrewartha on population ecology and Peter Marler on animal behavior. My theoretical interests at the time straddled the boundaries between cultural and physical anthropology. My strong commitment to evolutionism and scientism was tempered by an equally strong commitment to humanism. These two elements continued to define the two parameters of my fieldwork and my subsequent writings and are found in the present book.

J. Desmond Clark, who had just joined the Berkeley faculty after some 20 years of research at the Rhodes-Livingstone Museum in Zambia, was especially enthusiastic about this research. Clark was instrumental in focusing our attention on Southern Africa as a research locale and in particular on the !Kung San, a hunting and gathering people in the northern Kalahari Desert.

### THE SEARCH FOR A FIELD SITE: 1963

Financed by a grant from the National Science Foundation, Irv DeVore and I embarked for the Bechuanaland Protectorate (later Botswana) in the summer of 1963. We entered the Kalahari Desert by Land Rover from the northeast in mid-August, teaming up with Adam Kuper, a South African anthropologist who was heading for fieldwork with the Bakalahari, a Bantu-speaking pastoral people in the western desert. Together we combed Northwestern Botswana in our initial survey, but we found

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few San except those closely tied in to European and Tswana cattle posts. We were intrigued by reports of a large cluster of semi-independent !Kung groups in the extreme west of the country on the South-West African border around a place marked Xangwa on the maps. But in our initial attempt to reach the area, we were turned back by an overzealous expatriate officer of the Bechuanaland colonial administration. (Botswana did not receive its independence from Britain until 1966.)

After DeVore returned to the United States in September, I made my way back to Maun with two Land Rovers, accompanied by Marie Kingston, a friend from Canada; Onesimus Mbombo, a Rhodesian school-teacher, to act as interpreter; and Enoch Tabiso, a member of an acculturated San group near Livingstone. Tabiso had been Desmond Clark's gardener in the Zambian town of Livingstone. This time I picked my way more carefully through the network of colonial and tribal administration. Mrs. Elizabeth Pulane, the queen mother and regent of the Batawana tribe, interviewed me and gave me a letter in Setswana to her local representative, Mr. Isak Utugile, the headman of the !Kangwa (Xangwa) district. I met Isak in Nokaneng; he turned out to be a gruff, impressive white-haired man of about 60, who spoke no English (I later found that he spoke fluent !Kung, in addition to his native Setswana, and Seherero). He had been the headman since 1948, and because no European had ever lived in his district before, he interviewed me intensively through an interpreter for 7 hours before agreeing to accompany me to !Kangwa and introduce me to the !Kung.

On October 7, 1963, we set out from Nokaneng heading west through the acacia forest along a little-used track. The first !Kung village was 100 km ahead, with no people and no water in between. The trip took us 8 hours; we stopped frequently to cool the overboiling engine and clean the thick mat of grass seeds that continually formed on the radiator screen. I used the stops to learn a few words of greeting in !Kung and to marvel at the changing vegetation and rich bird life. It was almost dark when we chugged laboriously into !Goshe, the first water hole in the !Kangwa valley, with me in a state of nervous anticipation. Isak called the people out, and shyly in twos and threes they came forward—about 35 people in all. Reassured by Isak, the people became animated and milled around the trucks, chatting gaily. In those days the arrival of a vehicle was a rare event. Isak told them I was a white man who had come to live in the area and learn their language. They should be nice to me, and I would give them tobacco. This was my cue to pass out handfuls of tobacco to everyone and to repeat my newly learned greetings over and over again.

Then we moved on to !Kangwa itself, arriving in the pitch dark to stay for the night. The next morning Isak told me that 15 km to the west an independent group of !Kung was living at a small water hole called Dobe. We decided to move on there immediately, and Isak assigned his son