

---

*Megan Biesele*

## **Sapience and scarce resources: Communication systems of the !Kung and other foragers**

---

### **Introduction**

As Godelier stated,<sup>1</sup> the study of myths, symbolic activities, etc., is as important as the study of hunting techniques or of kinship relationships. I propose that we go even further in pinning this intention down, and that we lay careful groundwork for relating hunter-gatherers' symbol systems, through the study of their use in social arrangements, to specific environmental adaptations. How does world view, through communication systems, govern social and economic activity in specific environmental contexts? The focus of

---

*Paper presented at the Conference on "Hunting and Gathering Societies", Paris, Unesco, June 27-30, 1978.*

The discussion in this paper takes place at a level of generalization, some of it frankly speculative, which may seem unjustified by the amount of hard data included. I want to draw attention to the fact that this level of generalization is intentional, and to justify it by pointing out the urgency of developing certain perspectives to foster crucial areas of research. I address myself in this paper to the following issue:

Our professional access to the needs, values, and sapiential processes (knowing, making decisions, solving problems, and generating consensus) of the world's last hunter-gatherers may be the only way of filling an information vacuum demonstrably relevant to the survival of egalitarian decision-making in human societies. In short, the communication systems of these most senior human collectives may be of survival value for us all.

*Social Science Information (SAGE, London and Beverly Hills),  
17, 6 (1978), pp. 921-947.*

the inquiry, I suggest, should be the study of 'sapiential paradigms' of man/society/environment which operate to coalesce community and motivate action.

I define 'sapiential paradigm'<sup>2</sup> as follows:

- 1) the repertoire of dominant images, image relationships, symbols, and metaphors used as constitutive elements in the prevailing world view of a society; and
- 2) the array of structures of description, inference and persuasion used by a society to make decisions, solve problems, and generate consensus.

The groundwork should be laid in such a way that data on these paradigms operative in different societies may be readily compared and contrasted. Immediately we confront the question of whether, indeed, that is possible. Can the exciting and fruitful correlations now being done in other areas of social science through the use of computers be done on this important class of information? If so we would have a rich source of insight into the various communication systems operative within hunting and gathering groups. Through them we can better understand social integration around the specific economic arrangements encouraged by environment.

Further, such a base — in terms of both data and comprehension — would help us to examine how *changes* in social and environmental parameters impact upon the hunters' and gatherers' communication systems. The importance of understanding both how hunters communicate among themselves and with other societies they come in contact with should be obvious, especially in the crucial political situations in which most hunting societies find themselves today.

Perhaps most importantly, understanding the sapiential processes of human groups at this level of organization may prove extremely relevant to emerging world situations which involve us all. A distinction can be made between the "structural authority" operative in present bureaucratic industrial society and a "sapiential authority" which would better characterize and fill the needs of our emergent cybernetic, limited-resource society. As I suggest in this paper, good reasons exist for linking this post-industrial "sapiential authority" with the processes of arriving at egalitarian consensus based on high information-input and individual participation observable among living hunter-gatherers (see, e.g., Silberbauer, 1978).

Introducing the topic of the dominant images underlying communication/action systems in hunter-gatherers, the first part of this paper draws upon examples from the !Kung of Botswana. It deals especially with some vital socio-economic concerns of these people which can be made clear by structural analysis of their oral literature. I discuss how several problematical areas of !Kung life — sickness, initiation, childbirth, weather, hunting, and danger from carnivores — are related to each other by five key !Kung metaphors of transformation. These are !*kia* (trance), *n/um* (magical energy), *n!au* (a complex of ideas relating hunting, childbirth, and weather), *n//au* (special powers residing in the back of the neck), and !*kxwoi !go* (a constellation of ideas relating to avoidance of carnivore attack). Each of these five folk concepts, in turn, is linguistically/conceptually connected to the 'power' of animals. Animals function as operators to mediate within pairs of opposed states of being toward desirable outcomes of coolness, maturity, individual and social well-being, safety, and hunting and gathering success.

The !Kungs' use of metaphoric animal power to influence environment gives us clues about how they regard their environment and their relationship to it. Certain areas of life for the !Kung — like the pursuit of animal protein in a sparse, semi-arid environment — are chancy, and men resort to supernatural power to supplement knowledge and skill. Folklore and other symbolic expressions provide social scientists with abundant primary data, both on environmental adaptation and on attitudes toward the social and supernatural worlds on which agreement and action are based.

Men as hunters and women as gatherers both have symbolic access in !Kung society to animal power for added strength. This strength underlies and informs their strength as social beings and as producers. The paper goes on to discuss the !Kungs' male and female creation stories, and a group of stories expressing the give and take of power between men and women, as reflections of the two main social categories. Women's rites and tales symbolize the establishment of one vision of world order, men's, another. However, the two are analogous in structure and form a seamless whole by complementation. The equal-but-different male and female symbolic roles extend to many events and items which interact in the tales. Women are connected with gathered foods, the moon, cold, fragrant *sā* powder, and herbivorous animals. Men

have symbolic dominion over hunted foods, heat, fire, the sun, arrows and arrow-poison, carnivores, and medicine smoke. Relations between these opposite spheres center around a comprehensive metaphor linking eating and intercourse. Men hunt and "eat" women as carnivores prey on herbivores.

In the background of pervasive metaphors like these lie specific technologies for influencing the environment. One of the most important in the !Kung case is that of the poisoned arrow. The highly cerebral, disciplined, and social nature of hunting and meat distribution connected with this technology has affected many of the !Kungs' social arrangements and thus their art. The practice of arrow-sharing so clearly described by Lorna Marshall (1976), for example, is symbolic of shared protein needs and of the necessary social relationships within these small living groups cooperating reciprocally around a scarce resource.

Underlying metaphors such as these necessarily shape decision-making. With the !Kung, animal imagery permeates thought about relatedness, subsistence, and cooperation. Taken together, such metaphorical expressions and their usage make up a sapiential paradigm (such as Griaule found after twelve years of fieldwork with the help of Ogotëmmeli) linking and describing man, society, and environment.

Another factor in a good understanding of internal communication in hunting-gathering groups is the importance they give to *individuals'* contributions to community knowledge, and the degree to which improvisation in belief is respected and tolerated. !Kung religion is examined from this perspective. From there the paper goes on to suggest that rejection of individual revelations or interpretations of items of belief may begin to be manifest at that point in the evolution of a hunting culture when the perceptual universe becomes "overloaded". This point in turn may be linked to population pressures and resource stress (see Guenther, 1978). The possibility is advanced that religious belief systems rigidify from inclusivity into exclusivity when their 'economies of transcendence' become saturated and their 'currency' (personal narratives of revelation) wax too prolific.

But let us turn from the specific concerns of this paper back to the analysis of hunting and gathering societies as a whole. The main challenge, it seems to me, is toward some kind of comparability of metaphoric data from many hunting societies in different environments. One way to do this might be to approach various pro-

blematic areas of life, as suggested above, in which people try by extra-human means to influence environment and wrest resources from it. We could then examine the metaphorical underpinnings, through looking at myth, ritual, and everyday discourse, of 1) specific technologies for solving survival problems, and 2) social attitudes toward land and resource use, to name only two possibilities.

In doing so, of course, we confront the basic question of the ways in which linguistic/attitudinal information may be compared — ultimately, the challenge of its computerizability. I anticipate an interesting exchange of views on this question.

Then, suppose we were to have success in constructing this kind of data-base. What could we do with it? For one thing, arriving at a sound, data-founded understanding of hunter-gatherer communication systems and how they react to change may help us to be of use to these people as they confront specific change situations in the modern world. For another, knowledge of the ancient, humanly-workable, and egalitarian decision-making processes among hunter-gatherers will allow fruitful extension of some of their principles to problems of our own. Innovative group processes such as facilitated management by objectives, simulation, and synectics, which are beginning to prove worthwhile in solving larger-order modern problems that transcend the abilities of our fragmented bureaucracies, resemble in some respects the sapiential processes of hunter-gatherers. Genuine comparisons between them should become possible. I also suggest that information science may be able to develop mathematical models to describe the information-intensive decision-making processes of hunter-gatherers so they may be further extended to solve problems of the future.

The culminating challenge for structural study of the relationship between idea and action then becomes how to initiate radical transformation from obsolete world paradigms to workable ones reflecting the dwindling survival options but expanding communication networks of our era. In the future, we may find that hunter-gatherers have taught us 'how to make out on scarce resources'.

## I. !Kung imagery: Man/Society/Environment

In the following discussion, we take a look at some of the 'sapiential paradigms' operative in !Kung society. Familiarity with these repeated polarities of !Kung thinking allows us to construct, for heuristic purposes, a comprehensible framework into which many of them can be fitted. Such a framework can greatly facilitate our understanding of the structure of !Kung world-view. It will also give us an entry into the dynamic processes of metaphorical mediation which work to resolve oppositions in the world view. Such resolution processes are used as fundamental metaphors for social processes, and as such, forge and maintain community.

*Hot: cold; male: female*

In !Kung folklore, ritual, and daily life, concepts about heat and cold and their mediations (into coolness) play important parts in many contexts where the complementarity of male and female roles is at issue. In the centrally important healing dance, men 'heat up' their *n/um* or spiritual energy so as to use it for curing. But if it heats up *too fast*, it must be 'cooled off' or slowed down, and then reheated more gradually. Too rapid 'boiling' of the *n/um* annuls its healing power, because the *n/um* owner goes into unconsciousness before he gains control of the boiling. Men who feel trance coming on too quickly for them will cease dancing, and will draw back from the fire and the concentration of forces propelling them toward trance. Significantly, women offer such men water with which to cool off. Women also watch to prevent insensate trancers from burning their bodies in the fire. Women protect men, thus, from too much heat. Men use controlled heat to bring about the health and well-being ( $\neq$  *deu*, which also connotes coolness) of members of the community. Men carry tortoise shells filled with magical substances to produce hot medicine smoke for trancing. In the tortoise shells carried by the *women*, however, is aromatic *sā* powder, explicitly said to cool a person and promote a sense of well-being.

Men's and women's actions in the healing dance are complementary: the end-point of their collective activity is the re-establishment of a state of all individuals involved which is neither hot *nor* cold — a state of physical and social harmony for the entire group.

The values of egalitarianism and tolerant concern for individuals are important ingredients of this dynamic dance process. Men know they cannot do it without each other; women know they cannot do it without each other. Similarly, men cannot do it without women, and vice versa. Women's role is as singers and clappers for the dance and as protectresses against too much fire. They actually form a ring around the fire *shielding* the men from it. Men are the ones who dare the devastating effects of heat — mediated somewhat by women — to wrest benefit *for* the women and for the whole community.

The complementary roles of men and women in the dance are paralleled by the basic divisions of labor into hunting and gathering. Women gather plant foods, and their power and prestige are inextricably linked to their role as deciders about and providers of this food resource. Men are hunters and they make the decisions and do the things that are necessary to bring down animals. Plant foods and meats are shared quite differently among the !Kung, and this social dimension is yet another important symbolic aspect of the male/female division of powers. While meat from large hunted animals is rigorously shared among all the members of a local group, plant foods belong to the woman who gathers them, to distribute as she sees fit among the members of the nuclear family.

But hunted food and gathered food are further cross-cut by a distinction between wet and dry. Dry foods are 'eaten', and wet foods are 'drunk'. Some foods we would associate with eating, like melons, are 'drunk' by the !Kung. Two very important foods transcend the eating/drinking opposition, however; they are fat and honey. Honey may be either 'drunk' or 'eaten', and so may fat. It appears that these two foods are conceptual mediators between several other oppositions as well. Not only are they liquid solids, unifying wet and dry, hot and cold, they are also symbolic of the great mediation between men and women — sexual intercourse. Euphemisms for intercourse, as a matter of fact, include 'drink fat', 'eat fat', 'drink honey', 'eat honey'.

Another polarity which is symbolically mediated by male/female intercourse is carnivore/herbivore — in !Kung, *!xoma/!xa* (cf. a similar distinction reported in Guenther, 1978, for the Nharo). There is much attention paid to the distinction between these two classes of animals by the !Kung. The mediation of *this* opposition — the killing and eating of the herbivore by the carnivore — is metaphorically connected in both folklore and daily discourse with

the pursuit of women by men. Many clues, too, point to a delicate use of this same sexual metaphor to describe the collaborative processes of the trance dance.

*Symbolic drama and !Kung folktales and daily life*

Attributes associated with women (such as menstrual blood, breast milk, gathering utensils) are considered antithetical to those connected with men (like semen, arrows, arrow-poison). Though they are to be kept apart in daily life, these substances and objects often interact in the folktales, and in the dramas worked out among them like mediation, resolution of dilemmas, and forward motion into new syntheses. (An instance is the flowing of a woman's blood — female — into the fire — male — and the subsequent revelation of misdeeds that results, which occurs in a number of the stories.) The forward motion of the tales into new solutions parallels the motions of the trance dance in that the desired state of social peace — the recreation of the culturally important 'scene' typified by the circle uniting diverse individuals — is established once more after an interlude of conflict.

*Basic metaphors of transformation*

Now I describe some important metaphors underlying the !Kung view of man/society/environment.

Ideas of hot and cold and the processes for mediating between them are central to three of the !Kung concepts mentioned. *!Kia*, or trance, is a means for reaching physical and mental harmony by using heat for ultimately 'cool' purposes. *N/um*, the magical power or energy for healing said to reside in diverse animals, plants, and other things as well as in the bodies of the *n/um k''xausi* or curers, is also associated in its activity with heat and boiling. We shall see too that *n!au* (or *n!ow*), a complex of ideas relating atmospheric conditions, hunting, childbirth, and the great meat animals, is built on an opposition between the desirable cool, rainy weather and that season of the year when great heat, dryness, and nighttime cold conspire to make the !Kung hungry and uncomfortable.

The concept of *n!au*, as Lorna Marshall (1957) has described, links men's and women's great 'procreative' powers — childbirth and hunting — to the vitally important polarities of the weather. Life and death, especially in a sparse environment like the

Kalahari, are closely bound up with the vagaries of the weather. The !Kung have a set of beliefs which are both a way to comment on the weather and the foundation for certain attempts to influence it. In the *n!au* beliefs, men are thought to cause weather changes by their interactions with the great meat animals they kill. Similarly, women influence the weather by giving birth to one 'kind' of child or another — rain-bringing or sun-bringing. A child whose *n!au* is good brings rain; one whose *n!au* is bad brings sun and want. The desired weather is cool and rainy. Coolness in this climate is closely associated with water and the wet season of the year. Undesirable weather is hot and dry or cold and dry. Both of the latter conditions are associated with the hunger of the long Kalahari dry season. The wet season is life, the dry one, death and privation. The metaphors of the *n!au* complex permeate to the core the folklore and ritual of the !Kung. The *n!au* powers are associated with a certain part of the body, the skin of the upper back at the base of the neck. This area is called the *n//au* or *n//ausi* (pl.), and it is explicitly designated to be the spot at which sickness is expelled from the body of a working curer. Only the curers (*n/um k''xausi*) ever see sickness leave this spot.

A person (curer or non-curer) with a foul or bad *n//au* (*n//au /''xau*) will keep rain from falling. Furthermore, a lion may come to bite him. One informant stated that such a person would be bitten precisely on the *n/au* spot by the lion. But a person whose *n//au* was good (*/''hum*, the !Kung say, 'fine,' or 'beautiful') would not die 'even if he were cursed.' Special feelings are attributed to the *n//au* spot: it 'tingles' if a person with whom one has an avoidance relationship sits behind one. If a young man is being given the power to trance and cure by an experienced curer who is sitting behind him, he might feel his *n//au* tingle as well. An understanding of these two concepts (*n!au* and *n//au*) points the way for comprehending yet a third, that concerning a relationship between men and carnivores called *!kxwoi !go*. Informants expressly linked having a bad *n//au* with danger from carnivores, or *!kxwoi !go*. If a person throws a hat, it is said that a lion will come to bite him. This induced bad luck is called *!kxwoi !go*. The lion will bite the person on the back of his neck, on his *n//au* spot. If he had a bad *n//au*, he will die. If he has a lucky *n//au*, on the other hand, he will live.

Other actions which can bring on *!kxwoi !go* or attack by lions include gathering grass at night and throwing a stick at a crying child. Marshall (1952) recorded a list of *!Kung* beliefs about throwing certain things and danger from lions. *!Kxwoi !go* is feared not from lions alone, but from other carnivores as well. The concept is even extended, today, to include aggression by *people* whom the *!Kung* call 'carnivores.' These include black people and 'angry' Europeans. *!Kung* use the word *!xoma* or *!xohmi* (pl.) to refer to this group of people as well as to carnivores in general. Relationships in the man/animal realm are thus metaphorically transposed into the man/man realm to express tension between insiders and outsiders. Like the other metaphors enumerated in the Introduction to this paper, *!kxwoi !go* is connected to the conceptual power of animals.

### *The power of animals*

When *!Kung* enumerate the animals, especially the large meat animals, they do so in a highly stylized, almost rhapsodic fashion. They count graphically and visually, putting successive fingers up to their lips as each animal's name is called. There is a certain way of stressing the syllables that appears in no other context. '*N!ig-hwasí, . . . /hausí, . . . n!sí, . . . ≠ dwasí, . . .*' etc. The list becomes a singsong. Almost, the eyes glaze over. The first syllable goes way down in tone. The second, the pluralization, goes up high and then comes down again, trailing off from near-singing into silence. People love to do it, and they count off the animals at every opportunity. The effect it conveys is of a dream landscape dotted with an impossible plenty of 'kudus, . . . buffaloes, . . . elands, . . . girafes. . .'. The order is variable, but the enunciation is extremely stereotyped. If a person thought you missed what he said the first time, he would start right in again at the beginning of the list. The effect of this stylized repetition is to establish and reinforce the idea of these animals as a special kind of 'goods to think with'. Individually and separately, each animal has its beauty, its strength, its particular usefulness. Taken all together, the impression of multitudinous animal richness in these listings was very strong. With access to some of that power, one felt, a person could do anything.

But what might a *!Kung* need animal power for, beyond protein nourishment? There are several realms of life in which *!Kung*

believe human beings cannot do it all by themselves. Things like curing the sick by calling on supernatural sources of power, traveling to another world to plead for those dying, bringing game into range, having an effect on the weather, fending off the attacks of lions — all seem to the *!Kung* to demand a source of power which is beyond ordinary human grasp. Accordingly, they seek ways of transcending human limitations, mediators between man and the forces of the atmosphere, metaphors with the strength to bridge worlds. Animals, because they are visible, visibly powerful, and near to hand, are sometimes chosen for these purposes.

### *Man, animals and creator deity*

A ritual relationship in hunting, linking man, animals, and creator deity, has been suggested for the San in general by Edmund Leach (1970, p. 34). Patricia Vinnicombe reports this suggestion in her interesting paper "Myth, motive, and selection in Southern African rock art" (1972, p. 195). The three eland creation myths that have been preserved from the Cape and the Basutoland areas suggest a widespread Southern San complex of similar hunting beliefs (Lewis-Williams and Bieseke, 1978). This complex included ideas about absolution for killing and the creation of new game. The */Xam*, writes Vinnicombe (1972) "also observed a complex set of rules when hunting eland, which is added confirmation of a ritual association. Shooting an eland with bow and arrow entailed a very close self-identification between hunter and prey while the poison was taking effect, and by killing the animal which was created with especial care by their deity */Kaggen*, the hunter suffered temporary castigation. . . ." (p. 195).

The peculiarly intimate identification between hunter and prey in San belief is traceable in part to the period in hunting during which a man can actively do no more but must wait for the poison to do its work. During this period the hunter's actions are no longer overtly instrumental; rather, they are ritual actions based upon sympathetic identification with the prey. Among *!Kung*, for instance, the hunter must not eat certain foods which would cause the poison to stick to the arrowhead and not circulate well in the blood stream, or certain juicy foods which might cause the animal to urinate out the poison (Marshall, 1955), or fat, which would loosen and weaken the poison (Marshall, 1952). His movements must be

circumspect and his demeanor grave. The /Xam observed a hunting avoidance called *!Nanna-sse* which forbade a hunter's eating the flesh of the fleet springbok during the time an arrow was in another animal (Bleek and Lloyd, 1968, pp. 271-275).

A slightly different ritual relationship prevailed along the Hei//om, as reflected in their concept of *soxa* (Fourie, 1928). *Soxa* was a term applied to the meat of animals killed with bow and arrow. It was subject to certain dietary prohibitions and had to be rigorously shared.

Among different San groups, different animal food avoidances and sharing requirements have been in force, but they all applied to "herbivorous animals among which antelope predominate", writes Vinnicombe (1972, p. 201). Certainly among the !Kung it is true that formal meat-sharing applies only to the large game animals deliberately hunted by organized parties (Marshall, 1964 p. 236). Such hunting parties generally use bows and arrows. As with /Xam, there is identification between hunter and prey while the poison is doing its work. The hunter's actions while the poison is at work determine whether or not the animal dies (Marshall, 1955). The owner and distributor of the meat is not necessarily the hunter himself but *the owner of the arrow*, who might well not be present. Marshall (1961, p. 237) suggests that the exchange of arrows among kin minimizes the hunter's act and emphasizes the sharing process. Apparently the /Xam exchanged arrows as well (Bleek, D., 1936, p. 149) and similar rules of ownership may have applied.

These facts suggest that avoidances and sharing were part of a complex including the social nature of the organized hunting party, the hunters' relationships to the rest of the community, and as Vinnicombe (1972, p. 202) suggests, "the efficacy of a hunting technique rather than the prowess of an individual hunter". A frequent !Kung expression for 'when an animal has been killed', or 'when I have killed an animal' is 'when an animal has died' (*ka !xa !hi*). This way of speaking further minimizes the hunter's act and emphasizes //Gaūwa's impersonal providence. It brings out as well the high social value placed on sharing. This valuation is implicit in the organized hunting party and the meat of definite social significance — the cooperative rather than individual nature of the pursuit and consumption of game. In fact, the manner of meat consumption itself reinforces ritual relationships connected with the hunting technique. John Marshall's film "The Hunters" makes the point that the careful meat distribution which follows reasoned,

deliberate hunting with bow and poisoned arrow is symbolic of social relationships within !Kung living groups. In "Bushmen of the Kalahari", a more recent film showing the effects of acculturation, Marshall points out that killing with guns from horseback seems to change the social nature of hunting. No longer is every scrap of the precious animal used, because it is too easy to get another. A technological 'advance' has meant that division of the meat now proceeds along lines of short-term material utility rather than as an affirmation of kinship ties.

### *Animals and religious belief*

A number of animals thought to be very strong are closely connected with the *n/um* of the trance dance. In one account given by a *n/um k''xau* (medicine man, curer) named K''xau Giraffe, the connection was quite explicit. K''xau felt, he told me, that his power as a trancer and as a curer partook of the giraffe's power. "Just yesterday, friend, the giraffe came and took me again..." he began. Then he launched into a long story describing his trance-journey to sky using the *n/um* of the supernatural giraffe.

Elsewhere in his account, K''xau described //Gaūwa, the ultimate source of all *n/um*, as a kind of Lord of the Animals as well. Leopards, zebras, locusts, lions, jackals, dogs, pythons, mambas, elands, giraffes, gemsboks, and kudu surrounded //Gaūwa in his house in the sky. Many other trancers repeated a similar list of //Gaūwa's animal possessions.

The strength of the !Kung medicine songs is connected with the 'strong' animals or things for which they are named. The great bucks like eland and gemsbok figure significantly in the symbolism of many different San puberty ceremonies (Vinnicombe, 1972). Animal materials used in ritual contexts are extremely numerous, and include fat, marrow, certain bones, certain muscles, horns, tails, blood and urine. In most cases the particular species of animal providing the material is an important indicator of the substance's particular power.

Predominant among the species utilized for ritual materials and metaphors among the San are the great meat animals. Predominant among these, in turn, are the large antelopes — kudu, gemsbok, eland, hartebeest, wildebeest, tsessebe, roan. The figurative power



of these animals helps to transcend what are felt to be ordinary human boundaries.

In the !Kungs' non-stratified, egalitarian social situation, it is clear that the balance or pendulum-swing between male and female power is crucial. Men have trance-curing and hunting. Women have childbirth and plant food gathering. All are indispensable ingredients of traditional San subsistence and social life. Their symbolisms interact to form the basis of all the major themes of San art and folklore. They are the dominant metaphors on which social decisions are based.

The two basic groups in San hunter-gatherer society, men and women, are the fundamental actors in the dramas both of myth and of daily life. The continuing relationships among their separate powers and attributes are the dynamic processes by which action proceeds through conflict into desired social syntheses. Associated with maleness are trance-curing, hunting, heat, the sun, the social division of meat among the entire group, arrows and arrow-poison, spears, quivers and other hunting gear, and the origin of fire. All of these attributes are implied in a 'male' creation story centered around the great branding fire. Femaleness is connected with childbirth, menstruation, breast-milk, gatherable plant foods and the activity of gathering, the solidarity of the nuclear family, the moon, and the origin of water. The 'female' creation story of the python-woman who falls into the spring recounts the establishment of the social order from a watery birthplace.

Mediation between these opposite spheres centers around a comprehensive metaphor linking eating and intercourse. Men hunt and 'eat' women as carnivores prey on herbivores. Fat and honey as liquid solids, the 'cool' results of the union of hot and cold, are used as alternative mediators. The mediators *themselves* are further equated in that the consumption of fat and of honey is metaphoric of the sexual mediation between semen (hot) and menstrual blood (cold).

Dem n!a, a !Kung man, described a good hunter as fearful of *eating or sleeping with his wife lest his poison get cold because she smelled of milk and sã*. Coming home after a successful hunt, however, such a hunter would like his wife with especial fervor. He would 'praise the meat', lying next to his wife with his face between her breasts. He would see her buttocks and her legs and he would be happy, 'because the meat had fat and was fat'.

*Eating, and sleeping with*, are equated symbolically in this statement. *Milk* and *sã* are also equated. Both pairs of words represent contact with female power which would cause the *arrow poison to get cold*. The hunter would fail in the hunt. When he comes home successful, however, he can immerse himself joyfully in the things which tie animals and women together.

It is hard to tell, even in this piece of everyday discourse, which meat — animal or woman — is being discussed. The metaphors tying women to the enchanting hunted prey are so intricate as to utterly defy untangling. In the background of complex metaphors like this lie specific technologies. Dem n!a's statement about the hunter and his wife sums up attitudes about women and hunting which are linked to the technology of the poisoned arrow.

Patricia Vinnicombe (1972) suggests an evolutionary framework which will help us to better understand these products of San artistry. The framework she suggests is the stone-age environment as confronted by a revolutionary new technology, the bow and arrow, and by the ritual which went along with its use.

I would further note that it was specifically the *poisoned* arrow which affected many of the hunters' socio-economic arrangements and thus their art. Once an effective arrow poison has been developed, hunters no longer need to wound animals mortally with their arrows but only to pierce their skins. Then much of their hunting skill centers around the tracking of the poisoned animals during the hours or days they take to die. P. V. Tobias (1965, p. 77) has related this feature of San technology to their development of an acute reliance on veld-craft. This communication system, uniting high degrees of knowledge and skill with belief, is reflected prominently in ritual and folklore. Much is made, symbolically, of the personal and social discipline accompanying the poison technology. The peculiarly intimate identification between hunter and prey in San belief is traceable in part to the period in hunting during which a man can actively do no more but must wait for the poison to do its work. During this period the hunter's actions are no longer overtly instrumental; rather, they become metaphorical ways of influencing the behavior of game and, very importantly, communicating with others in the group in such a way as to motivate cooperation.

To round off this section on the !Kung, we can say that their repertoire of dominant images, image relationships, symbols, and



metaphors revolving around the power of animals and the technology of the poisoned arrow is the source of mental structures for community action. This repertoire and its creative use by !Kung individuals in varying situations constitute a 'sapiential paradigm' for motivation and consensus.

## II. Communication and community

The function of the communication system in promoting cooperation around shared goals and views is the focus of the next part of the paper. The discussion touches on three related communication areas — folklore, religion, and group decision-making. I point to some general contrasts in these three areas between hunting-gathering and some more complex forms of social organization. A need for innovative future use of knowledge about the stable, long-lived communication/decision-making systems of hunting societies is outlined.

### *Folklore*

As a fieldworker in !Kung folklore I was immediately struck by the large number of creative variations in tales told by different tellers and at different times. As Guenther (1978) notes, variations seem almost endless. I questioned several !Kung storytellers about this aspect of their tradition. A typical reply was "Some tell stories one way, some another. Different people just have different minds." Though most people's ideas fell within the same broad structural framework we have been discussing, the question of 'right' versions seemed unimportant. What was important was the creativity of an individual's play with the 'pre-constrained' (Lévi-Strauss, 1967) elements of folklore, and the enjoyment it gave to other people.

One also notices the general absence of overt didactic or aetiological intent in !Kung folktales. They encode attitudes, categorizations, and information, to be sure, but they do not often end "...so this is why we have..." or "...and the moral of this story is...". Instead, they end as anecdotes end, either with a narrative punchline or merely trailing off into the possibility of another episode involving the same characters.

These two observations seem related and significant when compared with a relatively greater insistence on both 'right' versions and didactic purpose in, for example, the folklore of the neighboring agricultural Bantu-speakers. I suggest that the absence of both sanctified 'texts' and specifically 'educational' intent reflects the fact that the egalitarian !Kung do not shore up either a leader or a rigidly codified set of behavioral precepts with their mythology.

Paul Radin (1972) makes a distinction, useful in this context, between two types of African storytellers: one was attached in some way to a ruler, the other was free. The former (found principally in West and Central Africa) became very prestigious. Their productions spread into societies with less stratified political organization, for example, the Bantu societies of southern Africa. The stories told by these author-raconteurs tended to extoll the status quo and the ruler who embodied it. Earlier cosmological myths were pushed into the background. Animal tales were redirected towards the historical world of human beings. Culture-hero tales were progressively lost.

The absence of didactic, unified support for an authority system in hunting-gathering folklore, I postulate, is related to the kinds of daily decision-making and work-effort involved in the foraging mode. Unlike the repetitive, codified subsistence situations regularly confronting the agriculturalist, those that face hunter-gatherers day by day are more variable, and demand flexible opportunism for their maximization. For this reason, it is not surprising to find that hunter-gatherers do not, so far as I am aware, include proverbs in their oral repertoires. Proverbs, after all, are the codified-wisdom, status-quo-protecting form par excellence.

Nor is the stark realism of Bantu folklore and its emphasis on the contemporary scene often found in traditional !Kung tales. Traditional San literature in general takes place in an 'other-worldly' atmosphere. Guenther (1978) links change in this aspect of Nharo stories and religion to environmental and social stress. Symbolic comment upon actual surroundings becomes more important under pressure-filled conditions of change.

### *Religion*

The individualism of storytelling among the !Kung is paralleled in their respect for individual accounts of religious revelation. About half the adult men become trance curers, and they freely share with

others their experiences while in trance. Everyone's experience then is integrated into the accepted phenomenal world. The greatest *n/um k''xausi* ('owners of *n/um*', or trance-curers) achieve visions of the other world in 'journeys' they take to the home of the gods while in trance. Upon 'return' they relate to the rest of the group what they have seen, and this new information then enters the group's belief repertoire — even if it contradicts other accounts in some details. Surprisingly to us, there is egalitarian acceptance of each man's version.

One is very much impressed by the effect even a non-trancing person can have on local !Kung tradition. Inspiration, for instance in the composition of a new song, is explained as a direct channel opening between an individual and the creator god, //Gaūwa. Inspiration is a happy event that may occur to anyone, and its benefits are quickly shared. People praise each other for being mediums for such revelation, just as they praise the *n/um k''xausi* who make supernatural healing power available to the community.

Tolerance and enthusiasm for individual contributions to religious belief bears relationship to the generally egalitarian !Kung lifestyle. Overtly didactic or authoritarian ends are not served by !Kung religion: rather, the goal of such internal communication is the solidarity of the community itself. Community agreement provides an ongoing charter for uncoerced but concerted action.

So much diversity is tolerated in religious ideas that it is certain that it is not merely a clear *picture* of man's relationship to the beyond that is wanted or valued. Instead the community is welded together by a democratically-inclusive faith, which is a way of knowing, or more correctly a way of agreeing on knowing, which can incorporate contradiction. The source of transcendence, then, is community agreement itself, not the faith in a beyond.

In short, I am postulating that an early or traditional form of hunting-gathering religion was *inclusive* of all individuals involved and their ideas. To it is opposed an *exclusive* form of religion which evolved when there was communication overload due to internal demographic pressure or to environmental/social stress. Religion, in this view, may be thought of as an economy, and within it the 'kerygmatic' (basic, personal narrative of religious experience) as the currency. Population pressure leads to the saturation of the conceptual space by the proliferation of individual renderings. Words shape psychic space and when they become too dense, stress results. Pressure of numbers leads people to contradict each others'

religious ideas. Then no longer can items of belief bear the stamp of the individual, but must have the 'king's stamp' for authenticity.

At the same time and in response to the same pressures, hierarchical structures begin to form as more and more control is necessary for social equilibrium. Cabbalism, stratification, and the uneven accumulation of power/wealth go hand in hand. Certain types of imagery are used to *exclude* certain people. Institutions begin to take over social functions which once were played out in open, mutual social action between individuals. Theodicy — why the god does what he does — loses its mystery, and becomes a straightforward explanation of social reality (this process too has been remarked by Guenther). The mere process of intercultural contact creates the self-consciousness which leads to theology, which may be thought of as a 'gloss' on religion. The 'Lord-of-the-Animals' view of deity common in hunting religions is replaced with shepherd/gardener imagery, and the immediacy of access enjoyed by ordinary humans to contact with the divine is replaced by an obstacle course of intercessory figures reflecting earthly hierarchies.

To sum up, among foragers in unstressed situations both folklore and religion seem to be characterized by an egalitarian inclusiveness of individual vision within the limits of a broad structural framework. Population, resource, or political stress may push both toward progressive rigidification and elaboration. Hamilton and Hiatt's (1978) papers lead one to feel that different Aboriginal societies may provide good leads on this question.

### *Decision-making*

Decision-making among foragers, like folklore and religion, is also inclusive of all individuals concerned. Patterns of decision-making in a /Gwi band are thoroughly outlined in Silberbauer, 1978. In this section I summarize aspects of his discussion which are germane to the purpose of this paper, and supplement them with observations from my own fieldwork — and government research/liaison work — with the !Kung. Then I suggest comparisons with some emerging patterns of decision-making in our own society.

Silberbauer makes the following points about the /Gwi political process:

1. It is basically consensual, utilizing social processes which leave no residue of opposition to the made decision. This consensus amounts to the attrition of other alternatives.

2. The groundwork for consensus is laid before the public discussion takes place, in that individuals are contacted informally and information both on the alternatives and on prevalent opinion circulates generally.

3. Public discussion thus takes the form of a social *announcement* of decision rather than the actual process of decision itself.

4. Leaders arise and vary, in this process, with the circumstances of each decision. Firmness of personality, knowledge, and experience determine an *authoritative*, rather than *authoritarian*, leadership.

5. Leadership abilities do not overflow into habitual success, and coercion of any sort would mean the failure of consensus.

6. Rules of the game necessary to consensus include:

- a) the separation of an idea from the identity of its originator
- b) the 'privacy by public conspiracy' of certain areas of discussion
- c) the non-determinative (though often pleasurable) nature of point-scoring in argumentation
- d) agreement to adjourn if anger arises.

7. In sum, the style of decision-making is *facilitative* for consensus, force is excluded, and the end sought is cooperation, never power in itself. The group is the only legitimizer.

To this list of Silberbauer's I would add, from my work with the !Kung:

8. Compared to our own decision-making expectations there is relatively greater tolerance of temporary ambiguity. This ambiguity is important in that it allows time for more information- and opinion-flow. But because few options exist in the subsistence situation, action eventually results, even if ambiguity was originally high.

9. Concerted action traditionally involved very limited numbers of people (e.g., small hunting parties of individuals well-known to each other) and is directed toward immediate rather than deferred gratification (the latter would more closely characterize agricultural pursuits).

10. The 'environment as storehouse' allows individualism in work-decisions and thus promotes tolerance of public ambiguity in some decision-making areas.

11. Enormous knowledge of animal and plant species, and of alternatives and failsafes in subsistence, is utilized in decision-making due to the highly social nature of information-flow. Vital feedback, both positive and negative, is constant between all individuals, and problems are thus solved in an information-intensive environment.

12. The opportunism of the food-quest in foraging is visible in internal political process as well: individuals' allegiances to ideas and to persons shift readily with circumstances, so that few 'abstract' or habitual stances are taken in decision-making.

13. There is a high degree of present-orientation in decision-making, related to the large number of variables in subsistence strategies. Flexibility and respon-

siveness to genuine environmental conditions in decision-making are more important than any political alliances potentially to be made in the process.

Internal political process for the !Kung and /Gwi, then, and I suspect for other hunting groups as well, can be characterized by equal access to leader/facilitator role, and the community itself as goal, with all that implies about cooperation. Interestingly, such a characterization is not too far off base as a description of certain consciously-formed problem-solving groups recently being used in approaches to complex modern situations. The key linking the two kinds of group process is unrestricted information-flow in 'languages' intelligible to all participants.

I draw for basic principles upon three related kinds of artificially-constituted problem-solving groups: synectics, management-by-objectives, and the postulated characteristics of sapiential authority structures (Gordon, 1961; von Foerster, et al., 1968, and Theobald, 1972). The characteristics of information-flow in these groups are closely dependent on the agreed-upon rules of their decision-making process. I now summarize these rules, arranging them roughly following the list of thirteen points made about decision-making processes in foraging groups:

1. Focus is on 'group process' and goal is consensus around the most *informed* decision — i.e., that into which there has been the most information input.

2. Opinions are formed and polled *before* public discussion occurs, so that knowledge of alternatives and opinions is general.

3. Public discussion thus takes place in an open atmosphere of aired feelings and 'agreement to agree'.

4. The leader has or delegates the role of 'facilitator', to keep the meeting moving toward the shared goal of consensus. Natural leaders for one or other aspects of the discussion are allowed to arise as their claims to depth of knowledge in different areas become useful.

5. Authority is thus 'sapiential', based on information and/or the ability to channel it, rather than 'structural', based on frozen position in a hierarchy.

6. Rules necessary to consensus include:

- a) Ego-separation by leader-facilitator of his ideas from his identity.
- b) Agreement that certain areas of discussion are off-limits.
- c) Realization that 'putting down' an opponent rhetorically does not promote information-flow nor consensus goals.
- d) 'Rules of fair fighting' are adopted to minimize dysfunctional emotional episodes arising.

7. Coercion into agreement is recognized to lead to counter-productive residues of opposition. Leader's attempts to 'control' outcomes are also counter-productive.

8. Tolerance of ambiguity is recognized as necessary to the psychological climate of 'floating' towards creative solutions.

9. The free flow of all possible feedback information is encouraged. Individuals' commitments to the eventual plan, as well as the knowledge they possess, are both secured by this means.

10. Neutral at the start, willing to admit ignorance, and utilizing egalitarian round, rather than hierarchical rectangular tables, these groups' goal is *to agree*. The only 'wrong' answers are those which are not consensual.

11. Everyone's view is asked at the start: genuinely conflicting views help rather than hinder the process, since they stir up and reveal further information.

12. 'Voting' shortcuts are bad, since they polarize opinion. The processes of consensus forge commitment to plans through ownership of the planning process.

13. There is realization that the ultimate solutions to problems are rational, but the processes of reaching them may not be. Also the processes themselves are important to the group.

14. There is high 'permissiveness' or tolerance of individuals' contributions to the process. This factor is recognized as important because too-early attempts to discriminate impose a censorship which atomizes a group into its component parts. Each individual would then seek the approval of the group and 'test' his own messages too strictly before transmission. Genuine avenues to creativity, full self-expression, and personal commitment to the eventual goal would be cut off.

It seems clear that these more recent, artificial problem-solving groups have somehow stumbled upon some of the oldest and most effective of human group processes. This point should be made generally known: these processes work because they have been forged over the lengthy time-period of the stable hunting-gathering adaptive context. Planners should know there are more tips where these came from.

### III. Conclusion: Foraging paradigms and the future

Some of the innovative principles for decision-making discussed above come from business and bureaucracy. They are used only by a fringe few in these areas who realize the old hierarchical structures are no longer adequate to the solution of highly complex modern problems. This is largely because the solutions involve human motivation more importantly than they do technological remedies. Some are turning, thus, to 'systems' thinking which involves men and motivation in the whole picture.

Nowhere does this inclusiveness of vision seem as crucial today as in environmental awareness and resource planning. We are beginning to realize that our options in subsistence are, like those of hunter-gatherers, really and actually finite. Somehow, decision-making processes of the future must mobilize commitment to reasoned action resulting from this awareness. The fragmentation of interest groups and the deeply divisive processes of capitalist resource exploitation make the prospect seem distant indeed.

Part of the problem has been that, until recently, most Western group problem-solving activities have been both intentional and purposive at the same time. In other words, the purpose (the inherent 'creode' [Monod, 1972] of the activity) is the intention (the expressed goal or terminating point). But among !Kung, /Gwi, and probably others, the 'creode' is more likely group solidarity whereas the intentionality of the process is something else, some specific issue. Their religious processes, as we have seen, parallel decision-making in this way.

Communication of all sorts endlessly reinforces the legitimacy of the hunting-gathering group itself while at the same time facilitating free information-flow about a host of practical issues. The final decision, resulting in action, is thus eminently rational, while the unstated process incorporates vast amounts of 'irrational' social business resulting in the formation of community. The process is thus economical: many problems get solved in the course of solving one, and commitment is secured even as decisions are made. In contrast, Western group processes have led to humanly impracticable solutions because they have left human commitment out of the process.

Another factor in Western hierarchical structures that makes them unfit to deal with the higher-order problems the world faces now is the way in which they *distort* information-flow. No-one wants to bring bad news to his boss. 'Structural' authority tends to shape information to the appetites of the authority structure. Information becomes defended territory, and certain types of imagery are used to exclude some people and bolster others. If many individuals are ever involved in a question at all, it is 'how can we get the king to decide?' This is an energy-expensive mode of problem-solving, since it does not incorporate, as does problem-solving among foragers, the multitude of social purposes which it might. It is a mechanical, linear view of action and purpose which fails to take into account multi-valent human data.

In this context, hunter-gatherer sapiential processes can be seen as sophisticated, efficient uses of available energy. Not only are various social ends served synergistically, but the very mathematics of communication events in decision-making point to a more rational use of resources. I suggest a good information-science-based model should be generated to compare problem-solving in foraging societies with problem-solving by computation.

The ineffectiveness of current industrialized societies' sapiential processes seem to lead toward opposing alternatives:

- 1) reliance upon more 'law and order', i.e., totalitarian styles of authority, or
- 2) genuinely creative 'return' to earlier norms that fit the coming situation.

To a 'spaceship earth' with limited resources, hunter-gatherer decision-making processes, exploiting the competence and knowledge of each individual to the fullest while making a stable living from a sparse environment, seem at least suggestive, if not immediately applicable.

Arnold Toynbee has linked the rise and fall of cultures to success or failure to use what amounts to sapiential authority to deal with new realities. In our case, the dominance of the machine metaphor for decision-making and the authority it upholds has blinded us to almost everything but the economic aspects of human activity. This is one of our most dangerous problems: it is a sapiential paradigm which has prevented science from carrying out crucial research on universal human needs.

Willis Harman (1971) brings up another dysfunctional Western paradigm which must be changed — that of the ethic of unrestricted accumulation. Previous societies had limits on the uneven accumulation of power/wealth/justice. Past ethical checks on industrial society are no longer viable because its economics are now largely based on a network of giant corporations with no connections to altruistic concepts of redistribution. This earlier ethic has been 'based in transcendental values *external* to the basic paradigm of the industrial era'. Now the paradigm itself must be changed, or there is no hope of closing the widening gap between haves and have-nots.

In conclusion, conformity to a certain style of thinking is indicated in the language structures we use. Images of man/society/environment encoded in language structures underlie and determine patterns of social action. The images and how they

are used constitute 'sapiential paradigms' for community and consensus. At last, structural linguistics and its offspring, the structural study of cultural expressions and actions, has brought us understanding of the fundamental role of such sapiential paradigms in culture. Now the *real* challenge lies in an approach to fundamental change in our metaphoric view of ourselves in our world to accord with ever clearer realities.

*Megan Biesele* is presently conducting research on the !Kung hunter-gatherers. She is the author of numerous publications, and has a PhD from Harvard University (*Folklore and ritual of !Kung hunter-gatherers*). Author's address: Dept. of Anthropology, University of Texas, Austin, Tex., USA.

## Notes

1. M. Godelier, circular letter to conference participants, March 23, 1978.
2. This term is introduced both to eliminate false post-Baconian dichotomies like subjective/objective and sacred/profane which may obscure our view of what is really going on in thought systems other than our own, and to suggest the need for useful categories of information about the operational wisdom of non-Western cultures. Since hunting-gathering societies have been 'tenured' for so long, it seems possible that their apparently 'recondite' systems of thought may embody an essential and generalizable practicality. Blurton-Jones and Konner (1976) have shown, in fact, that !Kung ethnohistory is based on principles of observation and inference no different from our own science. It has good predictive capacity for their subsistence situation, and reflects a probabilistic view of the universe we would do well to understand and make available for comparative study in other hunter-gatherer societies.

## References

- Bleek, D.  
1936 "Beliefs and customs of the /Xam Bushmen", Part VIII: More about sorcerers", *Bantu Studies* 10.
- Bleek, W. H. I.; Lloyd, L. C.  
1968 *Specimens of Bushmen folklore*. Cape Town, Struik. (Facsimile Reprint)
- Blurton-Jones, N.; Konner, M. J.  
1976 "!'Kung knowledge of animal behavior" (or: "The proper study of mankind in animals"), in: R. B. Lee; I. DeVore (eds.). *Kalahari hunter gatherers*. Cambridge, Mass., Harvard University Press.

Fourie, L.

- 1928 "The Bushmen of South West Africa", in: Hahn; Fourie; Vedder (eds.). *The native tribes of South West Africa*. Cape Town, Cape Times.

Gordon, W. J. J.

- 1961 *Synecitics*. London, Collier Books.

Guenther, M.

- 1978 "Religious transformation among the farm Bushmen of the Ghanzi District, Republic of Botswana". Paper presented at the Conference on "Hunting and Gathering Societies", Paris, Unesco, June 27-30.

Hamilton, A.

- 1978 "Dual social systems: Technology, labour and women's secret rites in the Eastern Western Desert of Australia". Paper presented at the Conference on "Hunting and Gathering Societies", Paris, Unesco, June 27-30.

Harman, W.

- 1971 "Planning amid forces for institutional change". Unpublished symposium paper.

Hiatt, L.

- 1978 "The ideological functions of Aboriginal religion". Paper presented at the Conference on "Hunting and Gathering Societies", Paris, Unesco, June 27-30.

Leach, E.

- 1970 *Claude Lévi-Strauss*. New York, Viking.

Lévi-Strauss, C.

- 1967 "The structural study of myth", pp. 202-229 in: Lévi-Strauss. *Structural anthropology*. New York, Anchor Books.

Lewis-Williams, D.; Bieseke, M.

- 1978 "Eland hunting rituals among Northern and Southern San groups: Striking similarities", *Africa*, 48 (2).

Marshall, L.

- 1952 Notes.  
1955 Notes.  
1957 "N!ow", *Africa* 27(3): 232-240.  
1961 "Sharing, talking, and giving: Relief of social tensions among !Kung Bushmen", *Africa* 31(3).  
1976 *The !Kung of Nyae Nyae*. Cambridge, Mass., Harvard University Press.

Monod, J.

- 1972 *Chance and necessity*. London, Collins.

Radin, P.

- 1972 *The trickster*. New York, Schocken Books.

Silberbauer, G.

- 1978 "Political process in G/wi bands". Paper presented at the Conference on "Hunting and Gathering Societies", Paris, Unesco, June 27-30.

Theobald, R.

- 1972 *Habit and habitat*. Englewood Cliffs, NJ, Prentice-Hall.

Tobias, P. V.

- 1965 "Bushman hunter-gatherers: A study in human ecology", in: David, D. H. S. (ed.). *Ecology in Southern Africa*. The Hague, W. Junk.

Vinnicombe, P.

- 1972 "Myth, motive, and selection in Southern African rock art", *Africa* 42 (Jul.).

Von Foerster, H. et al.

- 1968 *Purposive systems*. New York, Spartan Books.