

## The Archaeology of Band Society—Some Unanswered Questions

The last decade has brought many changes to the archaeology of hunter-gatherers: new kinds of data have been recovered; new methods and techniques have been applied; and new kinds of questions have been asked and answered. Amidst this change it is too early to separate what will last from what is merely new. Hence, this review will not deal with the achievements of hunter-gatherer archaeology. By focusing on some of the unanswered questions instead, I hope to help the reader in evaluating the monograph that follows. *Band Society*, with initial caps, is viewed in this foreword as the cultural system which is manifest in the cultural behavior of most hunter-gatherer populations (*band societies*). Details of Band Society operation can be found in any of the following recent synopses: Bicchieri (1972); Damas (1969a; 1969b); Lee and DeVore (1968); Service (1971; but compare with 1968); and Williams (1965 and this volume).

### THE EVOLUTION OF BAND SOCIETY

One of the largest gaps in our knowledge of Band Society concerns the how, why, where, and when of its origins. Many factors contribute to the size of this gap. A large part of the blame must fall on the archaeological record. Whatever the area or time period, the Pleistocene cultural remains do not adequately reflect the cultural behavior of the hominids that produced them (see Isaac 1972a; 1972b:180). Moreover, many of the data have been collected in such a way that few, if any, cultural conclusions can be drawn from them (see, for example, Howell 1966:181; Clark 1973:2). But we cannot blame our lack of progress in this area of “culture” process solely on the poor state of the data. Some of the assumptions and expectations that have guided our research are equally at fault.

Few anthropologists would argue with the assumption that human cultural and physical evolution are closely intertwined. But the same assumption has also misdirected some of our expectations. Since behavioral change can proceed much more rapidly than biological evolution, it would be unrealistic to expect a simple relationship between the complex of cultural behavior that gradually became band society and the gene pools that are reflected in Pleistocene hominid remains. Cultural behavior and gene pool articulate with different aspects of the cultural and natural environment: cultural behavior can change in response to pressures that do not affect the gene pool, or it can buffer pressures acting on both reservoirs of adaptive response so that the gene pool remains unchanged. Thus, we should not expect the allometry of the hand (Musgrave 1971) or larynx (Lieberman and Crelin 1971) to provide useful guide fossils for the presence or absence of various features of Band Society. Similarly, we should clearly separate the question of Band Society origins from the question of human biological evolution.

It is even dangerous to treat the evolution of Band Society as a single question with a single set of answers. As long as only a few data were available for the Lower and Middle Pleistocene, the evolution of Band Society was frequently related to the appearance of a few easily fossilized cultural behaviors. The emergence of big-game hunting may serve as an example, since it ranked particularly high as a single cause of Band Society (Campbell 1966; Pfeiffer 1972; Washburn and Lancaster 1968). The bones of large mammals at Acheulean sites led to a complex chain of reasoning. Ethnographic analogy was applied to infer for the prehistoric hunter-gatherers all those behavior patterns that are associated with big-game hunting in some modern hunter-gatherers, such as local groups, coordinated game drives, symbolic means of communication, sexual division of labor and so forth. It is no wonder that the resulting behavioral construct approaches a band society. The immediate adaptive advantage of big-game hunting to the prehistoric hunter-gatherers

was not specified, nor the pressures that may have led to its adoption. Neither the archaeological data nor the traditional archaeological paradigm left much room to verify the presence of the behavior patterns that were presumed to have been caused by this activity. Thus, the search for type fossils for the emergence of Band Society had to remain empty speculation.

The archaeological remains recovered in Africa during the last ten years leave little doubt that many extractive and survival strategies of modern hunter-gatherers were already part of the Oldowan set of adaptations: tool-making australopithecines exploited the full size range of the fauna, shared food at home bases, and divided tasks among themselves according to age and sex (Isaac 1971:291; 1972b:171). It is also gradually emerging, that important parts of the band society behavioral repertoire may not have been present during much of the early part of human evolution (see, for example, Binford 1972; Isaac 1972). It is particularly doubtful whether means of symbolic communication such as language, ritual, and art were employed already; whether an incest taboo or local exogamy were enforced; and whether food sharing and exchange were practiced between neighboring home bases along the lines of kinship and mate exchange. Since the different processes of modern Band Society appear to have arisen due to different pressures and at different times, the evolution of Band Society can be explained only if it is broken down into a number of different questions that may require rather different answers.

Many processes of modern Band Society do not leave any direct archaeological evidence. Since they participate in a system of exchanges of energy, matter, and information, however, it is likely that they structure the archaeological record to some extent. For example, both the incest taboo and enforced exogamy have implications for demographic structure and process (Morgan 1972; Wobst 1974) and for the density and pattern of communication (Birdsell 1968; Yellen and Harpending 1972). This allows us to predict certain patterns of variability in the archaeological record if we suspect their presence. The same processes have implications for the genetic structure of human populations (see, for example, Williams 1965 and this volume), so that their presence can be verified in the fossil record if we can overcome the sampling problems.

While the *wheres* and *whens* in the evolution of various Band Society behaviors can thus be gradually approximated, the *hows* and *whys* present more difficult questions. Accurate answers require not only an adequate Band Society model as a terminus but also an understanding of the complex of hominid behavior that gradually evolved into the cultural system of hunter-gatherers as we know it today. Even an adequate description of this transformation is not yet possible. We may expect models of mammal and primate behavior to gradually narrow the evolutionary gap that has to be bridged. Recent attempts by, for example, Denham (1971) and Eisenberg and others (1972) seem to point in the right direction. Parallel to this, better questions should provide us with better data in the time range between two million and 40,000 years ago. The recent excavations at Vertesszöllös (Kretzoi and Vertes 1965), Lazaret (de Lumley 1969a), Terra Amata (de Lumley 1966; 1969b), Torralba/Ambrona (Howell 1966:111-140), Olorgesailie (Isaac 1968), and elsewhere illustrate the quality and range of data which lie in our reach if we ask the right questions.

Many important questions about Band Society origins are not often raised in the literature. What, for example, is the advantage of a kinship system, of the incest taboo, and of various alternative systems of mate exchange? What preconditions have to be fulfilled in terms of population structure, density, and distribution so that certain band society mating rules can be enforced? What are the comparative advantages of cultural means of population control over natural causes of growth dampening? Do these processes influence the ability of hunter-gatherer populations to exploit areas of low biomass, areas which impose a high mortality regime on hominid populations, and linear environments such as seacoasts and rivers?

The complexity of the questions presupposes complex answers. It is likely that systemic approaches will provide most of the answers. It is also likely that a major part of the research toward these answers will be carried out through computer simulations, with archaeological fieldwork primarily directed toward testing the predictions generated from these models. It would not surprise this author if the evolution of band society, as a major problem in "culture" change, would eventually compete with the attention given to the physical emergence of man and to the origins of agriculture.

## BAND SOCIETY TOOLS

It is not the aim of this review to evaluate the many competing and complementary models of Band Society. But some questions that directly affect the archaeological record are not dealt with in these models. The examples in the next few paragraphs do not exhaust the problem areas of hunter-gatherer archaeology, and they do not follow any perceived rank order of importance. Yet, if we cannot answer these questions, our credibility within anthropology will be compromised.

Material culture, particularly stone tools, is the archaeologist's lifeline to prehistoric hunter-gatherers. Unfortunately for the archaeologist, ethnographers have not paid much attention to the articulation of stone tools with different forms of cultural behavior. Only one factor is well-established: band society tools are only a minimal number of production steps removed from their state as raw material. Archaeologists, on the other hand, have traditionally focused almost exclusively on the time-space-form dynamics of those (stone) artifacts that are an arbitrary and high number of production steps removed from the raw material stage (see, for example, Bordes 1961; Sonnevile-Bordes and Perrot 1954-6; Tixier 1963). This has excluded from consideration all those tools—the vast majority—that do not fall into recurrent patterns of shape associated with specific function. The residual category of debitage, debris, or waste, usually comprising between 50 and 99% of all artifactual material (Bordaz 1970:45), is only taken as evidence for tool-production technology. But since much of this material can be used for the same activities as the “tools” which the archaeologist usually focuses upon, we are forced to a rather sobering conclusion: the reconstruction of hunter-gatherer behavior is usually based on biased samples and may reflect nothing more prosaic than sampling error. This conclusion is supported by recent ethnographic and ethnoarchaeological work (see, for example, Gould 1971; Gould, Koster, and Sontz 1971; White and Thomas 1972), as well as by laboratory experiments and by the analysis of working edges from archaeological assemblages (Feustel 1973; Semenov 1964, 1968). It is guiding ongoing archaeological projects, and a reanalysis of traditionally dichotomized assemblages may provide us with more surprises.

Why do hunter-gatherers however predictably produce a number of highly labor-intensive tools? Why do we find such complex production steps and such careful choice of raw materials in a few items? Why invest time in the process of production if there is no extractive advantage to the finished tool? Is this not a violation of the minimal effort and least-cost assumptions associated with some recent Band Society models (Sahlins 1972)? Which realms of cultural behavior influence the choice between the least-cost alternative (a random flake that is suitable for most tasks) and the more “expensive” finished tool?

It is entirely possible that the degree of tool elaboration and the relative adherence to strict mental templates may covary with the social context in which a given activity is carried out. The same extractive or productive activity, when practiced within social units of different size, composition, and permanence of membership may, thus, require different tools in its execution, or at least tools standardized to different degrees. Items that may change hands along channels of borrowing and exchange should show less variance around mental templates than other tools. Artifacts which enter communication contexts between social units (families, local bands) should reflect more work input than those which never leave a given group. If this line of reasoning is correct, female tools should be less elaborately finished and less standardized than male tools used for the same activities. In summary, the relative beauty, perfection, and production effort inherent in tools may not primarily measure the productive and extractive competence of hunter-gatherers. At least as importantly, it may allow us to measure social costs and investments. Hopefully, the expanding interest in the ethnography of material culture will provide us with some answers.

## BAND SOCIETY BOUNDARIES

This set of questions overlaps another problem area in band society—the role, function, and definition of boundaries between social units in band society. Progress in several areas may finally enable us to utilize lithic assemblages for generating and testing hypotheses about band society social processes. First, several techniques are now available to isolate and define the spatial foci of

activities on prehistoric sites (Whallon 1973, 1974; Binford and Binford 1966). Questions of proxemics, use of living space by social units of different size, function and composition, and intrasite dynamics on hunter-gatherer sites may, thus, eventually be answered. Second, we have gotten much closer in predicting those aspects of form on lithic artifacts that are solely the result of the raw material and tool production method utilized (see, for example, Speth 1972). Finally, careful analysis of use-marks on working edges and laboratory experiments may allow us to predict those items of form on artifacts which are solely determined by the productive and extractive function of a given tool. Progress in these three areas should enable us to ask some intelligent questions about “style” in hunter-gatherer material culture—about those aspects of the form of artifacts which primarily reflect the social environment of their users.

Only one example may illustrate the types of processual questions that are now open to our curiosity and have not yet been answered. According to Barth (1969), ethnic boundaries do not primarily arise in the absence of communication. Rather, they originate in spite of it and are maintained through communication processes. If Barth is correct, those items should best reflect social boundaries which enter into communication processes between adjacent band societies—the hunter-gatherer societies of the ethnographer, the dialectical tribes of Birdsell (1953), or the maximum bands of Steward (1968:333)—or which function in contexts which affirm these boundaries. Traditionally, however, archaeological “cultures” have been defined in terms of the most common items in the material culture. It is unlikely that these items are ever seen by a member of a different society; nor is it likely that they play a role in contexts of membership affirmation. It is not surprising that the ethnographic distribution of these items is clinal and does not correlate with ethnic boundaries (Clarke 1968: Chapter 9). The same consideration mitigates against any of the so-called Paleo-Indian and Paleolithic “cultures” defined according to the traditional paradigms of stylistic analysis (Bordes 1968; Willey 1966). The resulting “societies” represent a biased sample of “culture traits” shared clinally and differentially among populations that must have numbered in the 100,000s over areas of such varied characteristics that much of the processual information is lost when they are indiscriminately combined, compared, and contrasted.

Which items in the material culture should help us to define boundaries between adjacent band societies? Items in the sphere of ritual and exchange should be particularly sensitive to social boundary processes (circumcision knives, tshuringas, portable art, male dress and decoration and so forth). Unfortunately, these items are relatively rare and often do not preserve well. Ethnographic analogy cannot help us much either, because most of the ethnography has been society-centric and little concerned with boundary processes. Ritual and exchange, on the other hand, have usually been treated as fully independent systems. This makes it almost impossible to distill their interaction with archaeologically preserved items from the ethnographic literature.

Boundaries between band societies and the cultural processes involved in their maintenance are vital to archaeology and ethnology: the models of Band Society are designed for a universe of societies; the population of test cases against which hypotheses can be evaluated consists of societies; and the repertoire of ethnographically observed hunter-gatherer behavior has been collected and organized by society. To understand the processes that differentiate adjacent band societies requires problem-directed fieldwork. Given the rapid disappearance of band societies, archaeologists may provide a large part of the answer themselves.

#### BAND SOCIETY DIVISION OF LABOR

Ethnographers have traditionally overstressed the role of males in band societies (see, for example, Linton 1971). Even though this bias results from a predominance of male fieldwork in band societies, it is not necessarily a function of sexist attitudes. Male ethnographers have an easier time communicating with male subjects, and they have easier access to male activities. Thus, it is not surprising that most ethnographies present a male-centered view of band-society behavior. They frequently dwell on the male’s extractive, social, and ritual activities, and deal only marginally with the role of the females. This long-standing distortion in our band society stereotypes can probably be removed only by more female fieldwork, exemplified in such recent publications as Munn (1973) and Gale (1970).

The archaeological record, for different reasons, is biased in the same direction (see, for example, Deetz 1968:282). Most of the specifically female tools known ethnographically are made from perishable materials. The nonperishable tools, on the other hand, frequently resemble the tools employed in male activities. Particularly when discovered together with the nonperishable remains of meals (bone) on occupation floors, they tend to be interpreted as tools employed in male activities (hunting). Only ideal conditions of preservation (Gerasimov 1931, 1958; Behm-Blancke 1970; Whallon 1973) and problem-directed analysis (Isaac 1971) can remove this bias. No doubt some of the female contribution to prehistory can simply be resurrected by the general rule of thumb that gathered foods become increasingly predominant in the diet of hunter-gatherers as one approaches the equator (Lee 1968:42).

But even if all distortion of the sex roles could be removed from ethnographic and archaeological interpretation, the large residual question remains unanswered: why should there be hunting at all in those areas where vegetable foods and gathered fauna (eggs, small, young, and infirm animals, and the like) could satisfy all food and nutritional requirements at a lower exploitation cost? Why should there be hunting in environments where gathering could support a larger population?

The answers may lie in several rather different areas. Hunter-gatherer populations have been discussed largely in terms of simple predator prey models (see, for example, Clark 1972; Jarman 1972) or as populations of consumers without reference to other species that may consume the same food materials (see Harlan 1967; Lee 1969). In a more realistic ecosystem model, some hunting may simply be necessary to keep competing predator species or consumer species at bay (Thomas 1972:145; John D. Speth personal communication). Viewed from this angle, some of the hunting may not be a means of harvesting meat, but of maximizing the harvest of some other animal or plant species.

Another potential answer may lie in the area of human reproduction. Heavy manual labor significantly increases the number of stillbirths and involuntary abortions, and decreases the birthweight of babies (Rochester 1923; Balfour 1938; Douglas 1950). Given this relationship, we would expect the division of labor into males that largely hunt and females that largely gather to reduce female reproductive effort. If both sexes indiscriminately "gather" the same set of resources, the mean length of the female gathering trip would be longer than under either of the following alternatives: (1) females gather in the immediate surrounding of the camp, while males gather the same resources further away from camp, and (2) females gather in the immediate vicinity of the camp, while males go after different resources. Both alternatives would reduce the length of the female exploitation trip (heavy labor), and thus pregnancy wastage, particularly if the gathering success is negatively correlated with the number of gatherers and the length of camp occupation (see, for example, Lee 1969; Lee 1972a; Woodburn 1972; Hamilton and Watt 1970). Under alternative 1, the male extractive efficiency would clearly decrease relative to that of the females. Under the second alternative, males could make up for the greater length of their exploitation trip by bringing back more concentrated energy (meat of larger game). A similar argument, relating to infant weights, can be derived from Lee (1972b). Thus, even in environments where both sexes could gather the same set of resources, male hunting may be of adaptive advantage.

The articulation of male hunting with other sociocultural and biological processes clearly needs more study before its presence and prevalence are solely attributed to caloric intake. Archaeologists have to be particularly careful. A given combination of extractive activities that can be inferred from archaeological remains may not be an artifact of a single set of optimizing principles. Conversely, the same activity may have been carried out in relation to different optimizing principles at different times and places within the same society. If we want to account realistically for the behavior patterns of prehistoric hunter-gatherers, we clearly need more research on this set of questions.

#### BAND SOCIETY ROBUSTICITY

Band societies have been observed in all five continents millennia after the emergence of tribes, chiefdoms, and civilizations. This should caution us, as archaeologists, against overly simplistic models of Band Society. The same caution is due when the short period of Band Society

ethnography is compared to the time depth of Band Society. Moreover, Band Society ethnography has mainly focused on two broad areas of culture process: the day-to-day operation of essentially unchanged, and unchanging, cultural systems; and directional change toward greater sociocultural complexity. This preoccupation has to be evaluated against Service's (1968) admonition that *all* ethnographically observed band societies have been in contact with more complex sociocultural systems. Their persistence into the Sputnik era forces us to look more closely at the following questions: how do band societies maintain themselves in a changing sociocultural environment? Which changes are necessary so that a band society can retain its essential features even though its cultural environment is forever changing? Which niches are filled by band societies in a regional mosaic of more complex cultures—cultures that are powerful enough to outcompete the band societies if they so desire?

These questions are particularly important for the archaeology of the last 10,000 years. A set of adaptations that appears unchanged for thousands of years is evidence of powerful mechanisms of change: simple persistence testifies to innumerable rearticulations relative to surrounding societies. As an illustration, many band societies participate in regional and interregional patterns of trade which eventually tie them into the economy of civilizations and nation states. The most extensively documented example is the American fur trade (Murphy and Steward 1955). These patterns, however, are not restricted to the period of western colonialism. East African band societies produced most of the ivory traded on Arabian and Indian markets (Thorbahn 1974). Forest products gathered by Philippine hunters and gatherers were traded on Chinese markets (Hutterer 1973).

Viewed from the more complex societies, the relative ease with which trade is incorporated into the operation of these band societies provides evidence only of acculturation or of the decay of band society. But if trade is viewed from the standpoint of the band societies, it becomes a process that maintains their cultural systems and counteracts deviations in external relationships. The longevity of such trading patterns thus testifies also to the ability of Band Society to flexibly respond to changes in its environment. Similar processes of change, geared to the maintenance of Band Society in a changing cultural environment, may be expected in the areas of demographic structure, ritual, rules of kinship and marriage, population distribution, and exploitative patterns.

The implications for the postglacial cultural record are obvious. The question of band society persistence shifts from static "band society survivals" into the dynamic processual area. The dynamics of any given postglacial band society may be as much a function of the sociocultural environment as of the natural environment it exploits. Thus, the archaeologist cannot expect to explain the behavior of a prehistoric group of hunter-gatherers solely by reference to its habitat and intrasocietal process, much less by reference to single sites or occupation horizons. Only archaeologists can complement Band Society models based on modern ethnographic data with processual information inherent in prehistoric band societies. Whether our present models are sufficiently robust and dynamic for this added processual detail can only be answered by future archaeological work.

## CONCLUSION

This review has focused on some of the questions which archaeologists in the coming years will have to answer if they want to contribute to our knowledge of Band Society. The following monograph by B. J. Williams addresses many of the same questions. Written originally in 1965 and revised in 1973 for this memoir, it establishes a general model of Band Society to accommodate both archaeologically and ethnographically recorded hunter-gatherers. The model is evaluated against a specific band society (the Birhor of India) and a large part of the general ethnographic record on band societies. The implications of the model for the ethnographic and archaeological record are stated, and some genetic implications are evaluated by means of computer simulations. I hope that the explicitness of the model will provide new fuel to our discussions and that its broad focus will stimulate anthropologists of all persuasions to have another look at culture process in Band Society. Above all, I hope that the model will help to answer some of the processual questions of Band Society archaeology.

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