This essay discusses the proposition that the most serious failings in present models for interpreting archeological evidence are directly related to the fact that they incorporate numerous analogies with modern groups. This has prevented the development of frameworks of theory which might lead to an understanding of the sociocultural significance of archeological residues based directly on the comparison of those residues. The use of analogy has demanded that prehistorians adopt the frames of reference of anthropologists who study modern populations and attempt to force their data into those frames, a process which will eventually cause serious errors in prehistoric analysis, if it has not done so already. It is unnecessary, because it is possible to develop models for the interpretation of archeological evidence which minimize analogy. It is unscientific, because if we utilize models which are only sensitive to the elucidation of parallels with modern groups, the discovery of parameters of sociocultural structure unique to prehistoric time periods is impossible. Unless we can discover those parameters where they exist, evidence from prehistory will contribute very little to the understanding of ranges of variation in cultural systems, the nature of the interrelationships between elements of culture, or processes of cultural development.

A Theoretical Framework for Interpreting Archeological Materials
RECENT DEVELOPMENTS

In the last decade, prehistoric research has attained a new level of sophistication in the gathering and interpretation of archeological materials. The revolution that has taken place is a twofold one, involving the development of new methodological approaches to the gathering and simple description of data (most of which owe a great deal to other disciplines such as physics, statistics, paleontology, paleobotany, geomorphology, geography, climatology, and pedology) and the construction of new theoretical approaches to the interpretation of those data.

While all prehistorians agree that the materials with which they deal represent only a small proportion of the materials used and altered by human behavior, many would now reject the view Hawkes expressed only thirteen years ago, that without the aid of written records little information except that dealing with past economies can be extracted from archeological evidence (Hawkes 1954). A brief survey of only some of the modern research that illustrates this trend shows studies exploring the ramifications of White's (1959) view of culture as man's extrasomatic means of adaptation and Steward's (1955) concept of cultural ecology by Binford (1962) and Stuever (1966); studies involving consideration of the nature of the socialization process (Deetz 1960; Whallon 1965); examination of the process of cultural drift (Binford 1963); studies concerned with the nature of stylistic differentiation of socio-cultural groups and subgroups (Binford and Binford 1966; Cronin 1962; Deetz 1960; Longacre 1964; Whallon 1965); and attempts at definition of the number and nature of tasks undertaken by prehistoric groups (Binford and Binford 1966; Freeman and Brown 1964; Freeman 1966). The best of these studies have been directed to the isolation and examination of the functional and processual dimensions of cultural systems. Much less effort has been spent in the construction of frameworks for viewing the structure of such systems. Even where attention has been given to this aspect of cultural studies, research has involved attempts to determine the existence, in the prehistoric record, of structural principles observable in (especially “related”) modern societies. The method takes for granted that it is possible to derive, from the study of a sample of modern societies, elements of sociocultural structure (including whole institutions and corporate groups) which are homologous with those of the prehistoric period. Although this approach may be an especially fruitful one when applied to recently extinct cultural systems, it is likely to yield misleading results when applied to the study of cultural materials produced by more ancient societies, especially societies more than 40,000 years extinct.

THE USE OF ANALOGY

In part, the use of analogy in archeological interpretation has been due to a desire to construct categories of cultural development—“levels” of economic organization or social complexity—under the assumption that such constructs are the goal of evolutionary studies, and that the principles of the classification are derivable from our knowledge of the evolutionary process. However, the construction of such cat-
categories, which has been called “general evolution” by Sahlins and Service (1960), is really not “evolution” at all, but taxonomy. Multitudes of classifications of the same items, be they objects, organisms, or sociocultural systems, are possible (Simpson 1961). Some of those are “evolutionary” in the sense of being derived from the developmental history of the items classified, and some are not. To establish the relevance of such a classification to the evolution of the items concerned, one must base it on the historical record of development of the items. As yet, studies of the “fossil record” of cultural evolution are inadequate to serve as the basis for any evolutionary classification that is detailed enough to be useful. It is impossible to classify as yet ungathered data.

But are the data really ungathered? It is often assumed that this is not the case. Admittedly, it is said, the “fossil record” is incomplete, but we can substitute for missing elements in the record studies of the behavior of “modern representatives” of those elements. As Service says, “Certainly aboriginal Arunta culture is not younger than western civilization; it is obviously a great deal older, and precisely therein lies one of the virtues of studying that kind of culture” (1962: 8). The assumption that modern representatives of past stages of cultural development exist is a major justification for the use of analogy. Curiously, that justification is a derivative of the view that culture is an adaptive system. As Service goes on to say: “the aboriginal culture of the Arunta . . . is . . . a form of adaptation to a particular kind of (total) environment made long, long, ago and preserved into modern times because of its isolation” (1962: 8; the parentheses are his). This kind of reasoning is misleading.

It is based, of course, on the hypothesis that like environmental stimuli produce like cultural responses. In a very general way, this is true. (There are a limited number of methods of working stone by percussion. Elements not present in an environment cannot be utilized.) Nevertheless, if the statement is examined in detail, it is false. Each society exercises some degree of control over the influence of its environment by exploiting some aspects of environment at the expense of others. No society utilizes all it could of the offerings of its surroundings. In addition, the differences in the manipulation of the same resource by two distinct cultures are often great. Two “distinct” cultures from exactly similar environments, both of which are affected by exactly the same aspects of those environments, and both of which utilize identical resources in identical ways, would be part of exactly identical ecological systems. This is really the same as saying they would be one and the same culture. The validity of making inferences based upon general principles of adaptation discernible among modern populations is not denied; on the contrary, such inferences are necessary. But that is not the same as the inferential process I am attacking. In fact, it leads to contrary results.

It is known that modern populations of higher animals and their distributions are the result of a complex historical process involving long sequences of changes in adaptation to changing environments, including other animal populations. The present diversity of such animal forms is the end product of a series of developments involving numerous transitions from old to new environmental situations, either by population spread or environmental change, and numerous consequent
readaptations. In addition to this process, the complementary development of a variety of new "ways of making a living..." exemplified in the phenomenon of adaptive radiation" (Simpson 1961: 14–15) also played a large part. Competition for resources resulted either in differentiation of forms, often involving increasing specialization in the utilization of specific resources, or in the disappearance of all but one form from the environmental locus of competition (Simpson 1961: 16–17). Sociocultural systems, like animal populations, have tended to regional-and-resource specialization during the course of human history. New ways of making a living have occurred at the same time: one can certainly speak of the dispersal of food production as an example of an adaptive radiation. Any such radiation alters the interaction between members of the invaded natural community in some way (Simpson 1961: 10). In the case of the spread of food production, the process of clearing land for planting, among other factors, altered the size and nature of animal communities, and thus altered the possibility for hunter-gatherers in competition with agriculturalists to survive. At the present time, hunting and gathering adaptations tend to exist in situations which are undesirable to food-producing peoples. Where hunter-gatherers survive in environments utilized by food producers, they have usually had to specialize in the extraction of kinds of resources least affected by food production. They must, in fact, be totally unrepresentative of the sorts of hunting-gathering adaptations that existed before the advent of food production.

Another line of reasoning that militates against Service’s hypothesis is based simply on the logical limits to prediction from a limited sample. Hunting-gathering adaptations of the present are extremely diverse. From a detailed analysis of Bushman cultural systems, it would be possible to predict very little about the social structure of the Kwakiutl. The cultures do have elements in common, of course, but those elements are of such a general nature that information gleaned from one group is not particularly useful in interpreting the behavior of the other in any detail. (It is true that in another sense a great deal can be learned from the comparison. It illustrates the diversity of forms of structural elements among hunting-gathering peoples of the present, and the dangers inherent in reasoning from one or a few such systems to all.) Now, useful and detailed analyses of socio-cultural systems have really only been made among peoples who lived during the last hundred years. The total length of time during which hunting-gathering adaptations have existed, on the other hand, is on the order of two million years or more. It would seem logical that Bushmen are many thousands of times more likely to be representative of all modern hunting-gathering groups than all such groups of the present are to be representative of the total range of hunting-gathering adaptations past and present. This is especially so because most past groups were composed of beings biologically so different from present humanity that we simply cannot assume continuities (other than such broad ones that they are relatively useless in interpretation) between their behavior and our own.

I have not meant to imply that the comparison of past and present socio-cultural adaptations can reveal no important similarities or identities. However, such parallels must not be assumed to exist before it has been demonstrated that they do. The
use of assumed similarities with modern behavior in the explanation of the behavior of extinct groups is not only fallacious, it is also deleterious to research since it prevents the discovery that the postulated similarities do not exist.

**A MODEL MINIMIZING ANALOGY**

I have attempted to establish the fact that analogical reasoning from modern behavior must be kept to a minimum in the construction of models of past cultural systems. I intend to show in the remainder of this chapter that the construction of a workable model of the structure of culture, for use in interpreting archaeological materials in which a minimum of analogical reasoning is involved, is feasible, and that its application avoids the pitfalls I have outlined.

**THE NATURE OF CULTURE**

Any model of cultural structure which is to be of utility to the prehistorian must consider the material aspects of culture, since those include the observational data upon which he must base inferences about human behavior. It must be assumed, for the purposes of such a definition, that patterned occurrences of the elements the prehistorian studies can be discovered, and that when they are derived from undisturbed contexts they indicate that patterned human behavior was responsible for their existence. It must also be assumed that patterned behavior due to biological factors can be isolated from culturally conditioned behavior, at least potentially. Last, although ideas and values are important to the prehistorian as they influence behavior, values which do not become observable through some effect on behavior need not be considered part of culture. A definition of culture which satisfies these restrictions is the following: culture consists of both the total configuration of patterned activities (which are not simply referable to the biology of the actors) performed by a society, including the materials used in or produced by those activities, and the social units responsible for activity performance. This definition resembles that of Malinowski (1960) except that the focus of attention is on the end products of his institutions, and the “charter” of the institutions is equated with their “function.”

I stress that the prehistorian cannot reconstruct any activity undertaken by a given society unless that activity produced some preserved material evidence. Binford, on the other hand, has claimed that it is possible to “recover, both from the nature of the populations of artifacts and from their spatial associations, the fossilized structure of the total cultural system” (Binford 1964: 425). This statement would seem at first glance to contradict what I have just said. I do not really think it does. Binford does not mean to imply that we can reconstruct an extinct linguistic system, for example, from prehistoric materials. However, the linguistic system as part of the general system of communication in a given society is also part of the mechanism of socialization, and the nature of the process of socialization certainly cannot be denied to influence the patterning of activities in the society, right down to the form of the tools made and used by social units.
While it is relatively easy for the prehistorian to discern patterned occurrences of elements and to infer from them some of the parameters of the activities which produced them, and at least some of the norms governing their performance, it is much harder to determine the nature of the social units which performed those activities. In this stage of analysis, prehistorians have tended to refer to the patterned materials they observe as the end products of activities undertaken by corporate groups like those observable in one or another modern society. Once more, caution is necessary. In the first place it is unfortunately fair to say that few significant advances have been made from the study of modern peoples, in the ascertainment of “the extent to which the behavior patterns entailed in exploiting the environment affect other aspects of culture” (Steward 1955: 41) since Steward’s formulation of the method of “cultural ecology”; there is really no body of data available in analogy with moderns that can be applied to this problem without numerous intervening assumptions. Were usable data available, even if all extant social groups were found to exhibit a given correlation between social structural type and activity patterns, I am not prepared to admit that it is justifiable to assume that past social groups with many or even most of the same activity patterns necessarily also had the social structural type that is their modern correlate. I would expect to find among extinct cultural systems at least some relations between social structural type and activity pattern that are totally unrepresented among modern societies.

Another criticism of the equation of archeological materials with the activity patterns of corporate groups can be directed at a general confusion about the nature of social groups that is manifest in that equation. Social anthropologists have long recognized that not all social groups are corporate. A corporate group can be defined as one which has a body of collective rights and duties, an “estate,” vested in all members and activated in diverse situations, so that it can be said to be a “multipurpose” group (Fortes 1953; Nadel 1951: 160). In addition it may have longer existence than the life span of any member. All members of a corporate group may act as a body on occasion for the performance of some activity, or, on the other hand, only some of the members may cooperate as representative of the group as a whole. In contexts where they act as group representatives, they are recognized and recognize themselves as such, and their way of acting and their organization then follow from the rules of organization of membership in the group and its way of acting (Nadel 1951: 161). However, members of a corporate group may cooperate in contexts in which that membership is irrelevant. The structure of a hunting party need not be based upon the same principles as the structure of a composite family, even where all members of the hunting party are members of the same composite family. Some of the dimensions of group organization must vary, at least in the relative intensity with which they are stressed, as the group performs different functions.

Even though social anthropologists have tended to focus their attention on the corporate groups in society, those groups need not be the only important groups, or even the most important ones for the day-to-day survival of society as a whole.
Special-purpose groups made up of members of one or more corporate groups, cooperating to perform specific tasks and, perhaps, immediately dissolving after a very brief existence, are the basic units of action in society. They are also the units responsible for the accumulation of archeological materials. While such parties may, in fact, frequently coincide with corporate groups, the prehistorian cannot assume that they do; he must prove that they do, where possible, and this involves distinguishing the two conceptually for analytic purposes. To be of utility to the prehistorian, the definition of the “social unit” must include special-purpose groups or “parties” as well as corporate groups. (Since the culturally patterned activities of individuals can be as important to group survival as those of multi-person groups, the most utilitarian definition of the “party” is: any number of individuals [from 1 to n], who contribute to the performance of a given activity.)

### A GENERAL ILLUSTRATION OF THE USE OF THE MODEL

The application of this theoretical framework to the study of prehistoric materials does not produce any spectacular insights about their significance. In fact, its results are not nearly as interesting or emotionally satisfying as the probably greatly misleading caricatures of prehistoric lifeways which have often been derived by the misuse of analogy. It necessitates the slow and painstaking isolation of regular types of associations of materials, and their formal equation with activity types. Only much later may an attempt at functional definition of those activities, based on the characteristics of artifacts and contexts, be made. Each activity type must first be assumed to be the result of the behavior of a distinct party type. Next, detailed examinations of the formal characteristics of the artifacts which indicate the techniques of their manufacture and reflect motor habits involved in that process (Binford and Quimby 1963), combined with microscopic study of variations in their wear characteristics (Semenov 1964), and analysis of the distribution of associated materials in the clusters may aid in the discovery that ranges of variation of these characteristics overlap for some clusters and are distinct for others. This will hopefully permit the identification of parties which are multipurpose, or involved in multiple activities. Perhaps membership characteristics of a party may in future be determinable from the recognition of individual idiosyncrasies in artifact manufacture and use. These studies in conjunction with an examination of the configuration of between-cluster spatial relationships and cluster size (the “proxemic” pattern of each occupation [Hall 1966]) may be expected to lead eventually to the discovery of the boundaries of identity-conscious social groups.

### CONCLUSIONS

The system just outlined affords a systematic, objective method for the control of selected culturally significant aspects of archeological evidence for the purpose of intra- and interoccupation comparisons. It makes possible control over activity type,
as an example, permitting eventual study of variations in party makeup or size, or of the variation between functionally equivalent units indicative of activity performance by different identity-conscious social groups. Starting with evidence from one site, we may hope to extend these comparisons first to a few other sites, then gradually over the totality of the prehistoric period, as more excavations conducted to recover comparable evidence are completed. This method, an extension of the technique of “controlled comparison” (Eggan 1954) to archeological evidence, offers the only secure means of acquiring an understanding of the nature of the types of prehistoric institutions and the mechanisms which contributed to their maintenance or transformation (Eggan 1954: 748).

It is certainly desirable for all of us, as anthropologists, to work toward increased communication, and to make our findings as intelligible as possible to each other. But no anthropological subdiscipline has yet elicited the laws governing the structure and operation of cultural systems. The idea that prehistorians must interpret their evidence solely in terms of inferences derived from social and cultural anthropology is as fallacious as the idea that interpretations of the behavior of modern groups must be derived from prehistory. Each of the subdisciplines of anthropology studies but one part of the total spectrum of cultural behavior. No segment of the spectrum is any more important than any other. All must be combined if we ever hope to understand the nature of culture in all its dimensions, and, hopefully, from that understanding to derive general laws regulating the structure of cultural systems, their interrelationships, and the processes whereby they are transformed.¹

### NOTES

Sackett’s unpublished paper entitled “Archaeological Interpretation in the Upper Paleolithic,” delivered to the AAA annual meeting in 1965, also incorporates some of the same elements in a model of cultural systems. This paper did not come to my attention until it was circulated for the Man the Hunter Symposium, after my essay was completed.

¹. I am aware that many of the ideas expressed here are the results of the genius of others, especially F. C. Howell, L. R. Binford, J. D. Clark, J. Sackett, R. Klein, and, more recently, J. Deetz and D. Damas. I suspect that the ones I consider original are also secondhand, and that I have simply forgotten where I borrowed them. The total configuration is my own, however. It was helpfully criticized by R. Klein, C. Merbs, and S. Tax, and students at the University of Chicago, while I was writing the drafts. I am grateful for the advice I followed, and apologize for having ignored the rest.

### REFERENCES

A THEORETICAL FRAMEWORK FOR INTERPRETING ARCHEOLOGICAL MATERIALS