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ANALOGY IN ARCHAEOLOGICAL INTERPRETATION

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THE WORK of the archaeologist can be divided into four tasks. First there is the formulation and refinement of concepts; second, data gathering and processing; third, the interpretation of the data, and finally, synthesis. The four tasks are obviously related in an hierarchical scheme: concepts enable meaningful synthesis, synthesis depends on interpretation, and interpretation is ultimately founded on archaeological data.

Substantial progress has been made in approaches to the first, second, and fourth tasks in recent years. Productive work on concepts is illustrated by the successful *Seminars in Archaeology* of the Society for American Archaeology. The appearance of the new journal *Archaeometry* under the auspices of The Research Laboratory at Oxford, with its concentration on the application to archaeology of instruments developed in other disciplines, indicates how vigorous the attack on the second task has been. The ambitious work *World Prehistory* by Grahame Clark, if not wholly successful, demonstrates that a synthesis of human prehistory on a global scale is now feasible. What can be demonstrated for concept formulation, data gathering, and synthesis, cannot be easily shown for archaeological interpretation. If it is granted that acceptance of synthesis must vary with confidence in interpretation, it becomes apparent that interpretation warrants attention.

The most widely used of the tools of archaeological interpretation is analogy. In its most general sense interpreting by analogy is assaying any belief about nonobserved behavior by referral to observed behavior which is thought to be relevant. The purpose of this paper is to examine this single interpretative tool. Concentration is on analogies where no historical records are available as aids. Evidence which suggests that there is cause for concern with the present status of analogy as an interpretive tool is presented and some suggestions are sketched.

The introduction of analogy into archaeology can be traced to the era of the classical evolutionary ideology. Analogy in this period was elementary: if it were true that certain living peoples represented early phases of human history, then the interpretation of the remains of extinct peoples could be accomplished by direct reference to their living counterparts. A monument to this logic is Sollas' *Ancient Hunters*. In this work the Tasmanians, Australian Aborigines, Bushmen, and Eskimos were enlisted as modern representatives of four successive paleolithic complexes. The question of the use of any class of palaeolithic tools could be satisfied by direct referral to one of the four groups. For example:

Anthropologists are generally agreed that the Palaeolithic "coup de poing" was not provided with a haft, but was held directly in the hand; and that it was not used simply as a "chopper": it is extremely gratifying therefore to find that the Tasmanians had no notion of hafting their homologue, or rather analogue, of the "coup de poing," and that it served a variety of purposes, among others as an aid in climbing trees.[1]

Interpretation in this mode, however, was not without its anachronisms. It was noted that living representatives of early periods occasionally enjoyed the use of classes of objects which were thought to be distinctive of later periods. In discussing the Australian Aborigines, for example, Sollas noted that polished stone axes ". . . are supposed to be the exclusive characteristic of the Neolithic period; but as the Australians are still in a Palaeolithic stage of culture, they present us in this case with an exception, for which various explanations may be found." In resolving this problem Sollas calculated that they might have invented it themselves or borrowed it from neighbors, but he eventually concluded with the suggestion that the Australian Aborigines learned to polish stone via an extensive network which at one time stretched from Australia to Europe.[2]

The critical reaction to the evolutionary assumptions, coupled with both the unexplained residues resulting from this early approach and the recovery of new data, forced reconsideration. As a result analogy was partitioned, and now at least two broad categories of analogy are recognized.[3]

The first category encompasses the classical evolutionary usage with appropriate shrinkages in the length and breadth of the time and space dimensions. In those areas of the world where history grades into archaeology, or where, in the absence of written documents, analysis of current or recent practices and archaeological data indicate continuity, archaeological data is interpreted by analogy to historical or living groups. In parts of the Near East, for example, archaeological evidence for the process of beer brewing can be interpreted by referral to both ancient texts and contemporary practices. The folk-cultures of Europe exhibit farming tools and practices, structures such as houses and granaries, and devices for transportation, which can be linked directly with the prehistoric past.

What is called the "folk-culture approach" by students of Old World archaeology is paralleled in the New World by the "direct historical approach." Both

1 Sollas, 1911, p. 74.

2 *Idem*, pp. 179, 207-209.

3 A third category has sometimes been distinguished. This third category includes analogies to properties common to all men such as the need for capturing energy and the possession of a language. For purposes of interpretation this third category is meaningless. One does not need to undertake archaeological investigation to know that the individuals in a particular culture engaged in these activities. The question which the archaeologist seeks to answer is what were the particular patterns of a prehistoric people in carrying out these and similar activities.

approaches admit the initiation of study from either end of the time scale. It is legitimate, presumably, to study the historically known prior to close examination of the archaeological unknown, or, reversing the order, to procede from the archaeologically known to the historically unknown. If there is any sutble difference between the Old and New World approaches it is only that the longer time span in the Old World encourages the conception of smooth continuous passage from archaeology into history whereas in the New World the line between the two is more severely drawn.[4]

The withdrawal of the application of analogy from archaeological data where living representatives were assumed, to data where living or documented representatives could be demonstrated, left uncovered a vast temporal and spatial tract for which archaeological data existed. In order to cover this tract, consisting of over ninety-five percent of human history and a large proportion of the globe, a second category of analogy came into use. This second category is here called the new analogy to distinguish it from analogy where historical continuity was assumed, as in the past, or is demonstrated, as in the present.

Anxious to avoid the mistakes of the early evolutionary school, and in the absence of any universal and unique model to guide in the recasting of interpretative tools, the new analogy has been set in a restrained format. In effect, the new analogy consists of boundary conditions for the choice of suitable analogs. A consideration of the canon for the selection of analogs, the qualifications placed on the power of the tool, and an example may characterize the theoretical posture of the new analogy.

According to Clark the archaeologist should ". . . restrict the field of analogy to societies at a common level of subsistence," and should ". . . attach greater significance to analogies drawn from societies existing under ecological conditions which approximate those reconstructed for the prehistoric culture under investigation than those adapted to markedly different environments."[5] Willey would select cultures on ". . . the same general level of technological development, perhaps existing under similar environmental situations."[6] V. Gordon Childe advised that an analog ". . . drawn from the same region or ecological province is likely to give the most reliable hints. . . ."[7] In summary, then, the canon is: seek analogies in cultures which manipulate similar environments in similar ways.

The qualifications on the new analogy are weighty. The mass of archaeological data yields subsistence or subsistence-connected information; hence, relevant anal-

4 Compare Steward, 1942 with Hawkes, 1954.
5 Clark, 1953, p. 355.
6 Tax, *et al.*, 1953, p. 229.
7 Childe, 1956, p. 51.

ogies are to be initially restricted to this domain. The archaeologist is cautioned that the new analogy can provide only ". . . useful clues to general conditions, it can be a dangerous guide to the particular manifestations of culture . . .,"[8] or may ". . . in fact afford only clues in what direction to look for an explanation in the archaeological record itself."[9] The connection between the living culture or cultures and the archaeological culture in question is purely formal; there is no implication of direct generic relationship nor are any dimensions of space and time implied.

The following citation, from the interpretation of the mesolithic site of Star Carr, is an excellent example of the new analogy:

> The character of the finds suggests that we have to deal at Star Carr with a community rather than with the activities of a specialized group. The masculine element is sufficiently emphasized by the importance of hunting and by the evidence of great activity in the manufacture of tools and weapons. On the other hand, to judge from analogy with the hunting peoples of North America and Greenland, the importance of skin-working at Star Carr argues for the presence of women. Among the Eskimos generally women are mainly responsible for flaying the kill and preparing the skins for use. Men certainly play their part, especially in the hard task of thin-scraping caribou skins or when for some magical reason, as in preparing drum-skins among the Caribou Eskimos, it is considered wrong for women to undertake some particular task. Generally, though, it is agreed that the task is predominantly feminine and in fact constitutes the main part of women's labor.[10]

It would be misleading to imply that the restraint advocated in some quarters is practiced wherever archaeological data is interpreted by analogy. In fact, it would not be difficult to cite numerous cases in which less caution in the choice and use of analogs is clear. Consider, for example, the following attempt to interpret the *absence* of the caudal vertebrae of the otherwise well represented bovids in the important Australopithicine sites in the Makapansgat valley.

> To "tail" anything still signifies to "track it down." The leaders of Bushmen hunting parties, when tracking down their prey, signal to one another silently with the bushes or tails of the Cape fox. Tails spontaneously form flexible whips or flagella for beating thickets and grass-lands after game. The flagellum was one of the badges of the Pharaoh! The brush of a fox is the trophy of the chase. The warriors of Predynastic Egypt all wore bushy tails, that look suspiciously like fox-tails, and Pharaohs are delineated on Egyptian monuments retreating from the presence of gods looking back and trailing the bushy tails of an animal behind them. Horse-tails used to be emblems

8 Clark, 1953, p. 355.

9 Childe, 1956, p. 49. See also Clarke, 1951.

10 Clark, 1954, p. 10.

of rank formerly in Turkey, the rank depending on the number of tails (e.g., a pasha of three tails). Every South African witch-doctor carries an animal's brush preferably that of a wildebeste as every European witch carried a broom. It seems likely from the significance attached to tails universally by mankind in myth and history that their disappearance from the Makapansgat breccia is significant; they were all probably in great demand as signals and whips in organized group-hunting outside the cavern.[11]

In the engaging, less extreme example below an attempt is made to interpret the persistence of certain ceramic motifs in northern Georgia, U. S. A. Unlike the previous example, an awareness of boundaries is shown, if not rigorously adhered to.

I am not quite sure to what extent we can measure general ethnic continuity in terms of ceramic continuity. Modern women of our civilization seem much bolder than men in quickly adopting new fashions which seem to display no continuing evolutionary or gradual developmental stages, although these fashions definitely run in cycles. Modern women's status and functions, however, are of course quite different from those of the average southern squaw. Perhaps in the aboriginal Southeast, important new cultural traits that appeared suddenly and are the criteria for many of our major archaeological period designations were exclusively male interests: new weapons, pyramidal mounds, cult paraphernalia, things adopted by conquered or converted men; while the ladies stayed at home and made pottery that changed only gradually as the generations passed. Or perhaps we might better look at our own china dishware to see an expression of conservatism in spite of almost annual changes in foreign policy, Kinsey attitudes, hemlines, and hairdos. Even the atomic age will probably not change our chinaware, except maybe to break more of it.[12]

If the caution of the new analogy did not curb many, it did inhibit others to the point of not undertaking interpretation at all. In 1948 Taylor's *A Study of Archaeology* confronted New World archaeologists with their hesitancy to venture contextual interpretations. What Taylor did not realize was that to some conscientious archaeologists the strictures on interpretation, at least interpretation by analogy, may have in practice appeared formidable. More importantly, one student has argued that the new analogy is ineffectual in important areas, a second that interpretation by analogy is untenable; a third has abandoned hope of making any impartial judgment of the reasonableness of an archaeological interpretation. It will be instructive to consider these three points of view.

Hawkes perceives several kinds of cognition in archaeology. The distinction between them is marked by the degree to which history can be used in the interpretation of archaeological data. The kind of cognition for which the new analogy

11 Dart, 1957, pp. 167-168.

12 Wauchope, 1949, p. 23.

must be employed is ". . . a world wholly anterior to textual-historical evidence." In this world, Hawkes contends, interpretation cannot penetrate much beyond technology and subsistence. It is in these very aspects that man, according to Hawkes, is most similar to other animals. Where man is most unlike other animals, for example, in the possession of social, political, and in particular, religious institutions and systems, interpretative tools are near powerless.[13] An extreme position is taken by Smith: "It used to be thought," Smith writes, "that studies of surviving primitive peoples would provide the necessary analogies for interpreting prehistoric societies; but in the event the extension of ethnological studies has only served to show what an incredible variety of codes of behavior in fact actuate human conduct." Given this diversity, to ask for interpretation which utilizes living groups, is to demand "logical alchemy." Statements resulting from interpretations by analogy are assertions, not arguments, according to Smith. Imagine a situation in which at a given site one house structure is larger than all other house structures. If the larger structure is called an X, and not a Y or a Z, where X, Y, and Z refer to uses of a single large structure in living groups, then "You can't really say that you *know* that it is [an X], and if someone criticizes your assertion, it is impossible to produce sufficient evidence to convince him you are necessarily right." Smith finds interpretation by analogy indefensible and argues for its abandonment.[14] A third position is taken by Thompson. He grants primacy to the role of analogy in interpretation but contends that an evaluation of its use in any particular instance can be made only by assessing the competence of the user. Thompson dismally maintains that there is no way to improve this situation other than hoping for ". . . improvements in the methods of measuring the amount of faith we place in an individual's work."[15]

From the foregoing discussion it is apparent that there is no general agreement on the new analogy, either in theory or practice. Certainly a call to abandonment is sufficient cause for discomfort. If it were not for the fact that analogy in archaeological interpretation has suffered chronic ambiguity since the nadir of classical evolutionary simplicity, an impasse could be said to exist. The following suggestions are sketched to aid in placing analogy on a firmer foundation.

1. For any given archaeological situation there usually exists more than a single analogy which can be used in the interpretation of the data. The real problem is to select from this finite range of possible analogs the one which offers the *best solution*. Selection of the best solution is most efficient when the least satisfying

13 Hawkes, 1954, pp. 161-162.
14 Smith, 1955, pp. 4-6.
15 R. H. Thompson, 1956, pp. 331-332.

solutions are eliminated in a systematic way. Thus, a first elimination may be made on the basis of the economies, a second on the basis of the distances from the archaeological situation to the possible analogs as measured in terms of space, time, and form, and a third elimination may be based on the closeness of fit of the relationships between forms in the archaeological situation with relationships between forms in the hypothesized analogous situations. It may be that archaeologists in seeking analogs work in a systematic manner; but if they do it is seldom evident in the final solutions offered. Consider the following example:

> In this new soil, which was sticky and grey compared to the loose brown material in which the painted pottery had been deposited, we found polished-stone axes, polished-stone chisels, and flint sickle blades shiny from grain gloss. There was a brief alert when we thought we had come upon a burial, but it was a false alarm. Lying side by side in the soil were two large human thighbones, brown and shiny, polished from much handling. As they were completely alone, they were not part of a burial at all. All I could think of to explain their presence was that the ancient inhabitants of the Canary Islands, who were Neolithic people, had consecrated their kings by holding just such a pair of bones over their heads, and that pairs of thighbones were also used in the rituals of some of the Nilotic tribes of the Sudan. Perhaps the kings of Hotu had been similarly initiated into office. Who knows?[16]

If a systematic approach were used (it is not clear whether or not it was used in the above example), and the alternative solutions for a particular situation stated instead of the usual statement of a single solution (as above), there would be no need to examine credentials (which, in the above case, are extraordinary), but only the argument and the result. There is no touch of alchemy in the procedure outlined. Solutions to any problem are at best approximations arrived at by the elimination of those least likely. Simply, what is being suggested is the introduction of a clear systematic approach and considered statements of results in terms of degrees of likelihood.

2. It has been argued that the existing ethnological literature is inadequate for the purposes of archaeological interpretation because it contains either ideal descriptions of technologies, detailed descriptions without behavioral correlates, or no descriptions of technologies. On this basis it has been proposed that the archaeologist turn to the living community to compile his own inventories.[17] There is no question as to the merit of this suggestion.[18] If the argument which leads to the

16 Coon, 1957, p. 186.

17 Kliendienst and Watson, 1956, pp. 76-77.

18 This idea is of course not novel. For an excellent example see D. F. Thompson, 1939. Unfortunately most of the studies of this type have been directed at demonstrating that many aspects of a culture are not preserved in archaeological data.

suggestion is valid, however, then the procedure outlined in section 1 above might be acceptable in theory but not possible in practice. Is the argument valid?

There does exist, as has been emphasized by Kidder and Forde, a rich and suitable literature which is neglected by the archaeologist.[19] The store of information on pottery manufacture and its associated behavior, for example, is copious. A codification of this literature and other similar information banks would be useful. There are, further, at least some quantitative models based on ethnographic data which are available and qualitative models can be designed to fit the needs of the archaeologist.[20] Behavioral interpretation, in terms of degrees of likelihood, beyond subsistence-connected activity, is only apparently remote.

3. The past and the present, it is often claimed, serve each other: archaeology depends on ethnographic data for interpretation; ethnology can make use of temporal depth that studies of the past may provide. This dogma, useful as it may be for certain purposes, has contributed to drawing a fast distinction between the ongoing and the extinct, the living and the dead. It is my contention that no clear distinction exists with regard to the material evidence of culture. The point is not trivial, for the generally assumed polarity between the ongoing and the extinct has resulted in the total neglect of striking relevant data.

Every living community is in the process of continuous change with respect to the materials which it utilizes. At any point in its existence some proportion of materials are falling into disuse and decomposing, while new materials are being added as replacement. In a certain sense a part of every community is becoming, but is not yet, archaeological data. The community becomes archaeological data when replacement ceases. What the archaeologist disturbs is not the remains of a once living community, stopped as it were, at a point in time;[21] what he does interrupt is the process of decomposition. The observational fields of ethnology and archaeology overlaps on that proportion of a living community which is in the process of transformation. It is the study of this very special corpus of data within the living community which holds the most fruitful promise for analogy in archaeological interpretation.

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19 Tax, *et al.*, 1953, pp. 231-232.

20 For examples of the use of both types of models see Ascher, 1959 and 1961.

21 This erroneous notion, often implicit in archaeological literature, might be called the Pompeii Premise.

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