On the Concept of Types

An article by J. A. FORD *with discussion by* J. H. STEWARD

The Type Concept Revisited[1]

SEVERAL years ago, Kluckhohn (1939) upbraided anthropologists in general and archeologists in particular for failure to examine critically the assumptions and concepts which lie at the foundations of their methodologies. Perhaps this well justified censure has prompted the healthy introspection that has developed in the past decade and resulted in valuable papers such as those by Rouse (1939), Krieger (1944), Brew (1946), Taylor (1948), and Ehrich (1950).

As soon as students of cultural phenomena cease to be satisfied with comparisons of mere qualities of cultural traits and begin also to treat their data quantitatively, it becomes apparent that the basic conceptual tool of cultural research is that of the type. To the present it is the archeologists who have been most concerned with the formulation and use of cultural types, but this hardly redounds to the credit of this branch of the profession. Archeologists have been forced into this position by the necessity for reconstructing cultural histories from a very limited range of cultural material. Although the term has been used indiscriminately, in practice the typological concept has been thoughtfully applied almost entirely to ceramics. The principles are the same, however, for all other aspects of culture, and we may expect to see it more widely used as sufficient evidence accumulates to make it possible and necessary.

To utilize the concept of type efficiently, it is very necessary that the cultural student have a clear idea of what a type is, how it is defined, and what purposes it may serve. At present there seems to be some confusion. The debate seems to center around the question of the "reality" of cultural types; a debate which is very similar to that carried on by the biologists for a number of years in regard to the significance of the species concept. To state it clearly, the question may be put this way: "Do cultural types exist in the phenomena so that they may be discovered by a capable typologist?" This is an important question for the answer not only determines how investigators may proceed in identifying types, but it also determines how types may be employed in solving cultural problems.

Both Rouse (1939) and Krieger (1944) have given excellent discussion of the application of the concept of type but have failed to clarify this debated point. Neither am I entirely satisfied with the statement in Phillips, Ford and Griffin (1951:61–64). Recently the question has again been brought up as a result of an article by A. C. Spaulding (1953) which describes a method for discovering cultural types by statistical methods. This discussion takes for granted the assumption that types do exist in culture and may be discovered by competent methodologies. This I doubt.

Perhaps it will clarify the problem to say a word about the history of the type concept, for the purposes of classification of archeological material have undergone a change beginning in this country during the second and third decades of this century. Initially archeological classifications were made for the purpose of describing collections, and the smallest divisions of the items were frequently called types. These groupings were defined without reference to the temporal and spatial coordinates of culture history. Where chronological information is lacking such descriptive classifications are the only sort that can be made and are extremely useful. A good example of such a classification is S. K. Lothrop's (1926) analysis of pottery collections from Costa Rica and Nicaragua.

The classifying of ceramics into type groupings that are designed to serve as measuring devices for culture history began in the southwestern United States and is now standard practice among American archeologists. Descriptive systematization is subordinated to the necessity for emphasizing spatial and temporal change in the material. Perhaps it is unfortunate that the word "type" has been retained for this new function because to some it seems to carry a connotation of its earlier descriptive usage. Krieger (1944:272) has stated the current purpose of formulating types in the following words:

> Thus the purpose of a type in archaeology must be to provide an organizational tool which will enable the investigator to group specimens into bodies which have *demonstrable historical meaning in terms of behavior patterns*. Any group which may be labelled a "type" must embrace material which can be shown to consist of individual variations in the execution of a definite constructional idea; likewise, the dividing lines between a series of types must be based upon demonstrable historical factors, not, as is often the case, upon the inclinations of the analyst or the niceties of descriptive orderliness.

Spaulding (1953:305) seems to agree that to be useful each type must have historical significance: "Historical relevance in this view is essentially derived from the typological analysis; a properly established type is the result of sound inferences concerning the customary behavior of the makers of the artifacts and cannot fail to have historical meaning." I certainly am in agreement with both these authors that to be useful, each type must have a limited range in time and space and thus have historical significance.

The discussion that follows will retrace some of the same arguments set forth by Rouse and Krieger but will consider typology from a slightly different angle. Instead of emphasizing the problem from the point of view of archeological specimens, I shall examine the concept as it would apply to a living culture. Further, to make the task easier and to attempt to clarify basic problems which the typologist must face, this will be fictitious culture history which has not been subjected to the complicating factors that operate in all actual histories. These factors are barriers to diffusion such as uneven population distribution, natural obstacles to communication, political and linguistic boundaries, or boundaries between competing cultural items of different geographic origin. Neither will it be subjected to the forces that speed and retard

cultural change—wars, epidemics, alien cultures with high prestige, or advertising by influential innovators. Each culture bearer has been the normal minor innovator that has borne the responsibility for most of the change that has taken place in culture histories.

The fairy tale which follows is the sort of "stripped" description of phenomena which has proved very useful in more mature fields of science, such as physics. Every physical "Law" states that if certain modifying circumstances were nullified such and such would happen. In experience the modifying circumstances are always present and events never conform exactly to the "Law." This, then, is my excuse for introducing the Gamma-gamma people of the Island of Gamma, situated in the curious sea of Zeta.

A CULTURE IS A CLASSIFICATORY DEVICE

With no intention to disparage the work of fellow anthropologists, it may be said that the synchronous view of the ethnologist is the most simple way to consider cultural phenomena. When an ethnologist first arrives among the Gamma-gamma of the Island of Gamma, their culture will impress him as a confused conglomeration of absurdities. The Gamma-gamma will do strange, unreasonable things and on many occasions will appear to be lacking in common horse sense—an impression that has been shared by every tourist who has come into contact with people having a culture different from his own.

As the more-or-less impartial ethnologist becomes better acquainted and begins to acquire something of the point of view of the Gamma-gamma, social actions and cultural objects begin to fall into classes. It will be discovered that these classes are well organized to solve the problems that confront this group of human animals: procuring food, providing shelter and protection from enemies, regulating mating and other social relations, and magical techniques that affect otherwise uncontrollable forces such as diseases and the weather. There are patterned ways of dancing, of constructing a canoe, of clothing and decorating the body, etc. In addition, if the basic premises of Gamma-gamma thought are accepted, many of these cultural categories have a logical, apparently inevitable, relation to one another and these relations are cross-ties that reinforce and stabilize the entire cultural structure. Certain dances are necessary as a preliminary to catching fish; a man cannot marry until he has killed an enemy—human or shark—and has been tattooed; houses are the property of women because they build them; children belong to the mother's family for where is the child who can be certain of his father?

This compartmentalization and order are necessary and will be found in all other cultures. To add to the definitions recently listed by Kroeber and Kluckhohn (1952), it can also be said that culture is an organized system for handling human and social problems. However, different segments of a culture will vary as to the range of variability which is permitted as acceptable behavior. The Gamma-gamma group has very strict rules as to how a man may address his mother-in-law: he must face away to avoid seeing her and preface all remarks with polite formal phrases—to do otherwise would cause great

scandal and what else no one knows for it has never been tried. However, there are a number of perfectly good ways to make an adze. Virtually any hard stone will serve as a blade, four varieties of hafting are used, and there are six shapes of handles. In addition, a man takes some pride in carving the handle in an original fashion, as different from those of his fellows as possible. Still, any ethnologist acquainted with the material culture of this region can recognize a twentieth-century Gamma-gamma adze at a glance. Despite the fact that it permits and even appears to encourage variability, this cultural trait is a classificatory device similar to the mother-in-law taboo and has wider but still rigid limits. The variation follows patterns and these people haven't thought of turning the blade around and making a hatchet of the tool.

It is this inherent order in culture of which archeologists must be aware when they begin the search for types for this is the framework within which the typology must be constructed. This is certainly the order that will be revealed by applying statistical devices to the ceramics of prehistoric dwelling sites as recently advocated by Spaulding (1953). However, this order does not provide the historically significant grouping of traits which the archeologist must have to measure culture history.

THE ETHNOLOGIST'S VIEW OF A CULTURAL TRAIT

The Gamma-gamma have each aspect of their culture well compartmentalized: pottery food-serving vessels have a limited range of shapes and decorations; water bottles have their appropriate range; and the containers in which the mild alcoholic drink is fermented have their range. However, the actual specimens that are manufactured for these various purposes are by no means identical duplicates such as would be turned out by a machine. Instead, each vessel is recognizably different from every other vessel in its class. As the ethnologist studies the pottery, and other aspects of the culture, he will observe that the variation in actual artifact tends to cluster about a mean, which he can then visualize as the central theme of the type.

The ethnologist cannot rely upon the culture bearers to define this central theme. They may or may not be aware of it, or may have rationalizations in regard to it which are at considerable variance with actual practice, as Dr. Kinsey's study of male sexual practices has demonstrated for our own culture. A statistical average must be arrived at, either by actual counting or by estimating. If desirable, the rationalizations may be considered apart for they are also cultural features and are subject to the same kind of analysis as actions.

The cultural trait, then, is an abstraction made by the ethnologist and derived from the cultural activity. It has a mean and a range of variation. This range of variation may be visualized as a scatter diagram—a three-dimensional scatter diagram similar to a swarm of bees clustering about the queen might better represent the situation, but there are limitations to the printed page and a two-dimensional diagram will have to serve. In Figure 1, I have attempted to represent the variation in houses that was observed among the Gamma-gamma on the Island of Gamma in 1940. As the diagram shows, the

majority of houses were medium-sized rectangular structures about 4 by 6 meters and 5 meters high, placed on low piers above the damp ground, and had gabled roofs, one room, and one door. Variations from this norm are observed in several directions. Houses illustrated toward the right of the diagram, mostly occupied by older people, were on high stilts, and one is in a tree. They

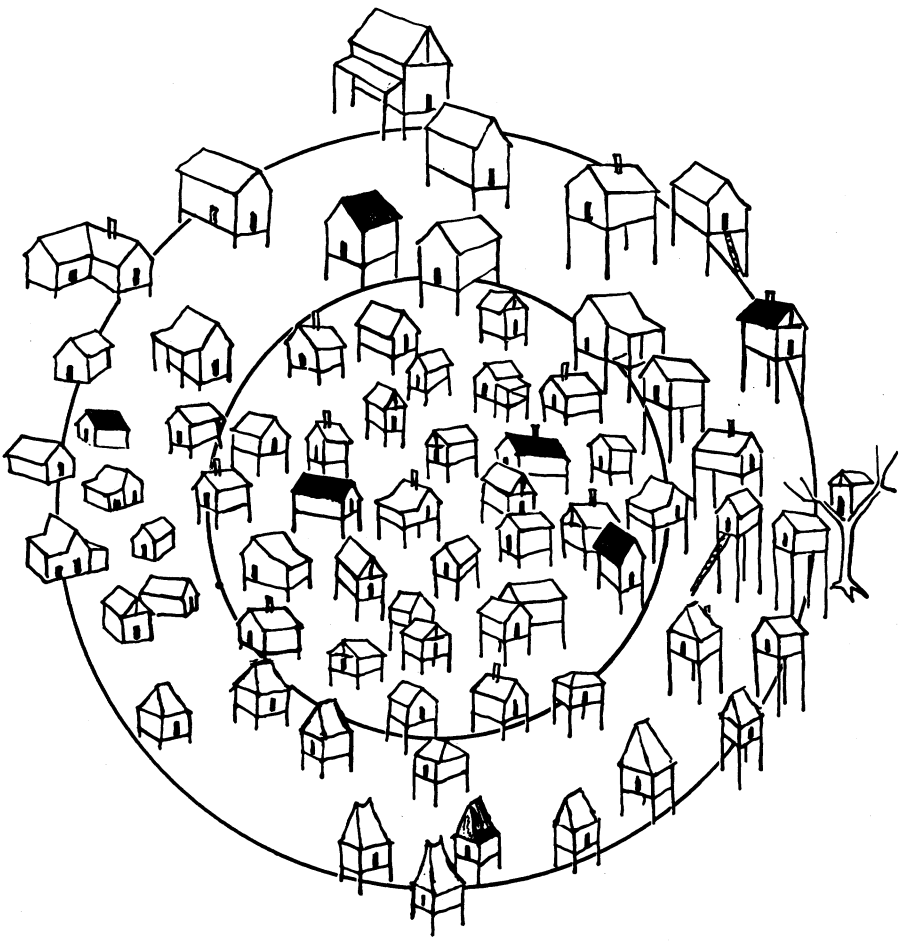

FIG. 1. A diagram illustrating the frequency mean of a type at one point in time and space. The small houses grouped in the inner circle represent the mean. Variation from this mean is illustrated in four directions—a simplification of the variation that is found about the frequency means of actual types.

tend to be smaller than the average. Toward the left side of the diagram, the houses are larger and are on very low stilts, or are built on the ground. A few have two rooms. Variation toward the top of the diagram tends toward larger size, and toward the bottom the houses are small, square, and the roofs approach the pyramidal in shape.

This description is an obvious simplification. As the diagram shows, there

are all sorts of variations between the four poles described and, in addition, there are other variables which could also serve as poles in this diagram. For example, some buildings are roofed with the white palm fronds and on others the dark gray *kilea* grass is used. Still, these combinations have definite limits of variation. None of the houses has more than one living and sleeping room, all are constructed of bamboo and thatch, and no one has introduced bathrooms such as are observed in the local mission buildings. To the ethnological observer it is quite clear that there is a Gamma-gamma house type with a mean and range of variation as just described. In Figure 1, what may be considered the mean of the type lies within the inner circle.

THE ETHNOGRAPHIC TYPE IS FORMED BY THE OBSERVER AT A CHOSEN LEVEL OF ABSTRACTION

The dwellings of the Gamma-gamma at first glance offer a convenient segment of their culture composed of tangible elements and would seem to be ideal for the purpose of measuring. Upon closer examination, the apparent concreteness of this category can be broken down in two directions, for this aspect of the culture is part of an integrated whole and became a measurable unit merely because attention was focused upon it. First, it must be recalled that these buildings are cultural products—not the culture. These arrangements of wood, bamboo, and grass are of interest to the ethnologist solely because they illustrate the aborigine's ideas as to the proper ways to construct dwellings. The cultural concept "house" can be broken down into elements. There are a range of methods to anchor piers, to arrange plates, to lash rafters, and at least four standard methods of thatching. Each of these elements can be measured in the same way as the entire houses have been and each will be found to have a frequency mean and range of variation. "House" may quite legitimately be considered as a cultural complex rather than as a unit.[2]

On the other hand, the concepts dictating the proper ways to build a house are not isolated in the culture. For one thing, they are intimately connected with the form of the family. These people are monogamous and married children set themselves up in separate establishments. There is never need for more than one living room, nor is large size necessary. In turn, the single-room small houses tend to reinforce this pattern of family life. The house, then, might legitimately be considered as one element of the 1940 Gamma-gamma family type.

It is evident that "cultural types" are abstracted on different levels of apparent complexity by the observer.[3] One level is no more "real" than another. What the classifier must do is to select a level which will serve the purposes in view. If the objective is a comparison of religions, the student will set up religious types; if it is concerned with priestly paraphernalia, the types will be formed of cultural traits which are mere elements for the preceding purpose. The cultural scientist must be aware of this necessity and not allow chance focalization of interest to provide categories that are accepted as immutable units.

THE ETHNOGRAPHIC TYPE IS ABSTRACTED BY THE OBSERVER AT ONE POINT IN SPACE

So long as the ethnologist stays among the Gamma-gamma on the Island of Gamma, the house type described above appears to form a satisfactory unit. It seems to be a natural division of the culture. However, in the surrounding territory live people with the same general cultural tradition as the inhabitants of Gamma. After the ethnologist finishes his preliminary survey of Gamma and begins to visit their neighbors, he will discover that there is another reason why the house type which he has described for the Gamma-gamma is not a natural cultural unit.

In Figure 2 is illustrated the frequency distributions of dwellings on the islands that lie about the Isle of Gamma. This is a very simplified diagram. On each island the house in the center represents the mean as illustrated in Figure 1; the four buildings arranged about each mean represent the range of varia-

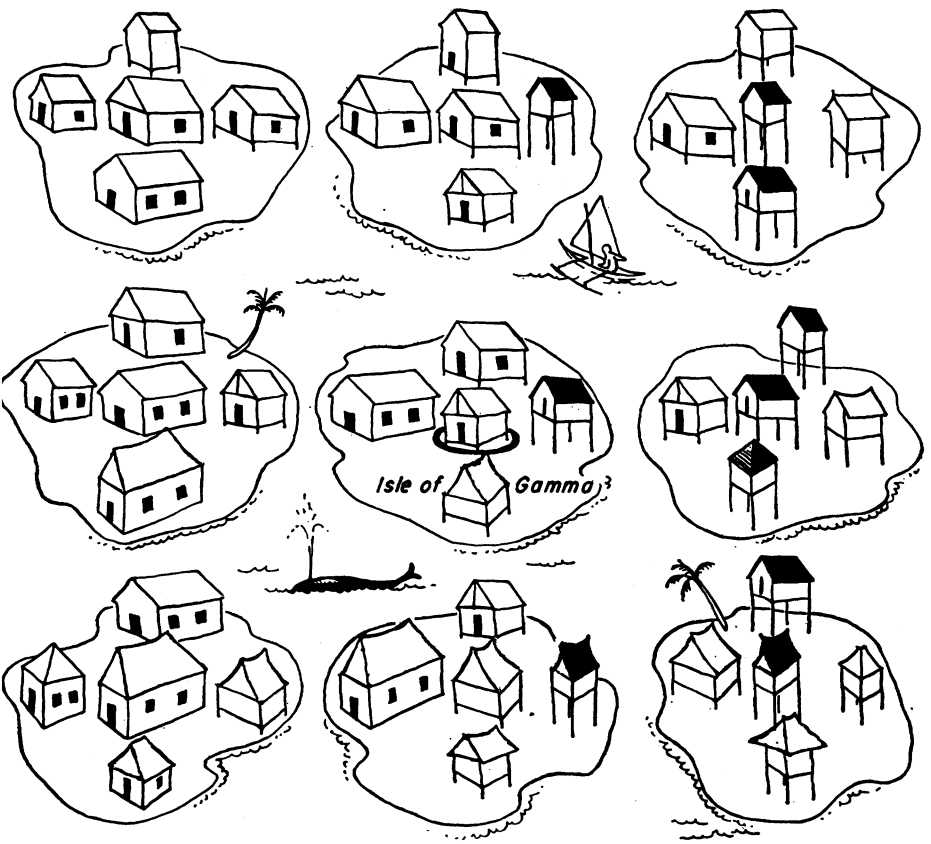

FIG. 2. Diagram illustrating trait variation in geographical space. The Island of Gamma occupies the center. The frequency of the Gamma-gamma house type is in the center of this island and the less numerous variations are grouped around it. On neighboring islands mean and range are similarly indicated.

tion. It becomes apparent that the Gamma-gamma house type, illustrated in Figure 1, is not the cohesive cultural type which it appeared to be. The variants from the mean have to be assigned to house types typical of the neighboring peoples north, south, east, and west. As a matter of fact, this diagram shows that the polarity of Figure 1 was not correct. All the black-roofed houses are related to a type that centers to the eastward. Very few examples need be left to be classed in the Gamma-gamma type house.

Figure 2 illustrates the point that each locality will have a distinctive mean and a range about that mean which tends toward the means of surrounding culture. However, Figure 2 is an unsatisfactory diagram in that the geographical separation of the islands has created nodes in the pattern of distribution. If the landscape had been undivided, the geographical variation would be a more gradual function of space, similar to that shown in Figure 3. Although this latter figure is designed to demonstrate the nature of change with time, it will serve equally well for this discussion of space-change. For this purpose it will be considered that each building shown represents a local type. Variation about the mean in each locality is not shown. The building near the upper center of the figure, just above the hurrying female in a grass skirt, will represent the mean type at Gamma-gamma. The gradualness of the change in means in all directions becomes apparent.

Lest the reader suspect that this description is pure fiction, he is referred to an article by Wilhelm Milke which summarizes several illustrations that qualitative differentiation in culture is a function of distance.[4] For an illustration that the *popularity* of specific cultural categories is also a function of geographic space, see Phillips *et al.* (1951: Figs. 6–12) and Ford (1952).

Setting aside the fictional Gamma-gamma for the moment, in actual distributions of cultural items change in form is accelerated by natural, political, and linguistic barriers, or at the zones where competing cultural items of different origins meet. For several reasons these barriers cannot be depended upon to furnish limitations to the spatial aspect of the variations that may be included in a cultural type. First, there may be no such barriers operating on the selected cultural item in the region under study—it is certainly not legitimate to assume that there were before their effect can be measured by the typology. Second, the effect of such barriers is often less than might be imagined. With the exception of impassable terrain, the effect of a barrier is usually to produce a more or less broad zone in which the rate of change with geographic space is accelerated.

It follows, then, that the particular locality where an archeological collection chances to be made will be one of the factors that determines the mean and the range of variation that are demonstrated in any particular tradition in the culture that is being studied. On the same time level, the cordmarked pottery from a village site in northern Illinois is different from that on a site in southern Illinois. If the archeologist has only these two collections to study and is not conscious of the nature of the problem, separate types may be "established"[5] and considered as realities, unconscious of the favor performed

by the chance geographic separation of samples. However, if additional collections, all of the same date, are available to fill in the intervening space, then the problem usually becomes the difficult one of fixing boundaries in a continuum which Phillips has described (Phillips *et al.* 1951:66–68).

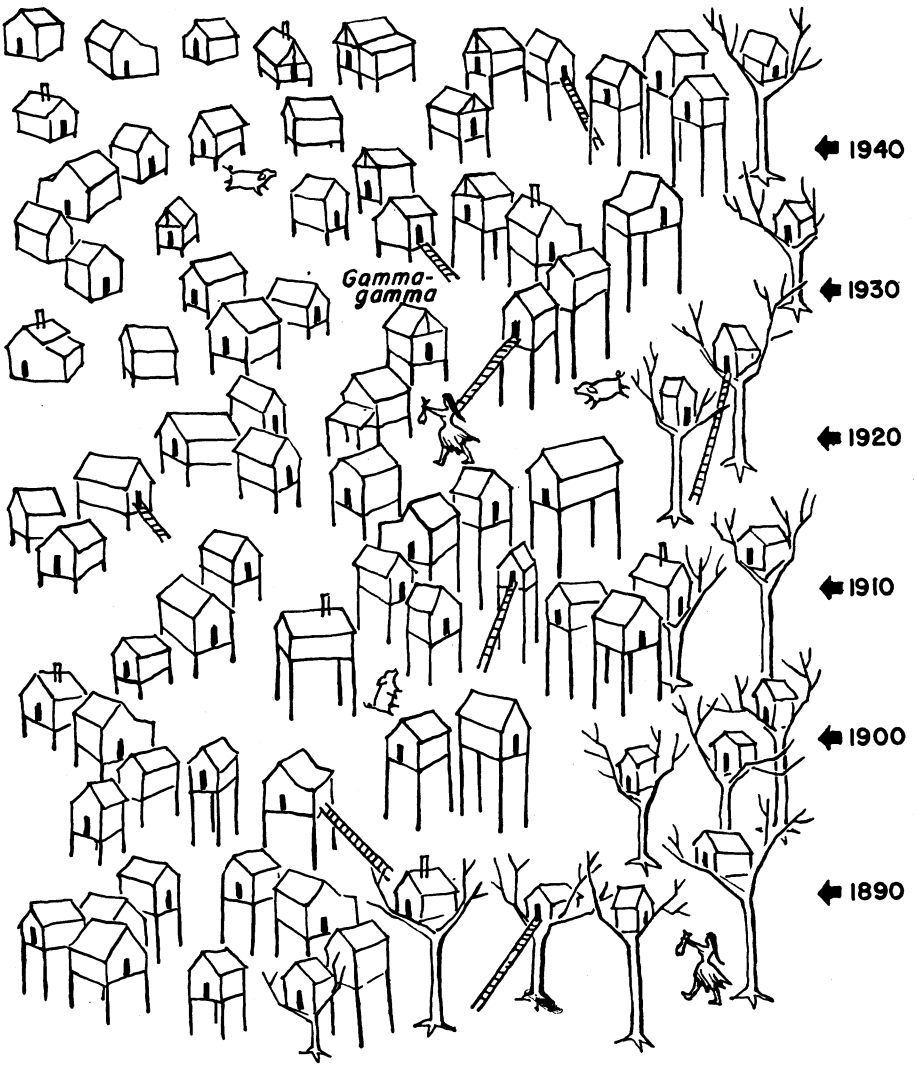

FIG. 3. This diagram will serve two purposes. First, it will represent geographical distribution of variation and for this purpose each house represents a trait mean. Location of the Gamma-gamma mean is shown and position of the houses represents geographical location. Second, this will serve as a chronological diagram. For this purpose time is the vertical ordinate of the figure and decades are indicated on the right-hand side. Variation is shown horizontally with frequency means in the center of the diagram.

THE TYPE IS ABSTRACTED BY THE OBSERVER AT A POINT IN TIME

The ethnographic view of a culture resembles a snapshot taken in the middle of a race for it is a static view of a very fluid process. Stretching back in time from each cultural element described and measured by the ethnographer there is a long history which must be traced if we wish to know why the trait assumes its particular form. For cultural traits that did not find expression in durable form, this is impossible; it can be done, however, for enough streams of thought to demonstrate the principle beyond reasonable doubt.

As illustration, again consider the mythical Gamma-gamma. In the 1940 static diagram, Figure 1, house structures are shown varying four ways from the mean of the type—already a simplification of the variation as explained above. To give a temporal picture of variation, it will be necessary to simplify still further and show only two directions of variation from the mean. This has been done in Figure 3, which now will be used for the purpose for which it was designed. From bottom to top this diagram represents the passage of time. Decades are indicated on the right-hand side. House form variation is shown horizontally and the frequency mean forms are illustrated down the center of the figure.

The phenomena of cultural drift with the passage of time is so well known to archeologists who have dealt with adequate samples of material culture representing appreciable time spans of culture history that it does not seem necessary to elaborate the illustration. Even in modern Western culture, with all of the acceleration of change that has developed, the well paid innovators who control design of automobiles, architecture, and clothing have learned that while minor innovations will sell new models, the buying public will tolerate no marked jumps in the development of stylistic patterns.

Figure 3 cannot fully illustrate the phenomena of time change among the houses of the Gamma-gamma for close inspection of these structures would show that not only did the gross outline of the structures change, but similar change was taking place in minor details such as systems for placing rafters, lashing, the methods of thatching, etc. The ethnologist's view of this cultural type in 1900 would have had the same order of mean and range as his 1940 view, but the types would have been recognizably different. A glance up and down the time scale demonstrates that there are no natural limits to temporal change in this cultural element which may be utilized as type boundaries.

In actual culture histories there are instances of major innovations which will cause one stream of cultural development to be replaced by another. An example is the addition of the gasoline motor to the buggy to make the horseless carriage. This is a different order of innovation from the numerous small changes that have occurred in the design of wheeled personnel carriers from the invention of the first cart to the rubber-tired buggy, or from Charles Duryea's automobile of 1892 to the 1953 Cadillac. Such major innovations are so rare that the archeologist cannot depend on them to provide temporal

limits for typology. They are of little use for the working out of *details* of culture history.

Abrupt change may also be caused by accidents, or profound shocks to the culture. For example, many Pacific island peoples have taken advantage of abandoned military establishments to change their dwelling types entirely. These are also relatively rare and typology based upon them would measure cultural change in great blocks, not in any detail.

To summarize the preceding discussion, there are four dimensions to the cultural type of which the archeologist must be fully aware if intelligent use is to be made of the concept. These are:

(1) The inherent organization that exists in culture at all times and places. The cultural type will, to a greater or lesser degree, be a reflection of the boundaries to one stream of ideas which the cultural bearers considered related. This requires an analysis of the consistency of association of features which may, if necessary, be tested by statistical analysis.

(2) The level of abstraction from the tightly interwoven cultural structure at which the typology is to be formulated. For archeologists this may be at the level of the artifact, or, if desirable, features of artifacts may be utilized as Rouse has done for ceramics in the West Indies.

(3) The cultural type will encompass variation due to cultural drift across geographical space. The apparent mean of the type is the function of the locality at which it is defined.

(4) The cultural type will include variation that occurred with the passage of time. The apparent mean of the type is a result of the particular point in the history of the cultural stream at which it is selected.

In most archeological research, chance has determined the form of the typological structure to a great extent. The fact that Site X was in a certain locality and represented a certain short span of culture history has determined the nature of the cultural types defined there. Permitting sampling chance to determine typology operates very well so long as the archeologist has only a spotty sampling of the culture history. Types are easily separable and they look natural. However, when the gaps are filled in so that the history may be viewed as a continuum through time and across space, the naive typologist is certain to run into serious difficulties. Overlapping of types will render the typology a meaningless conglomeration. The artificiality of the groupings must be taken into consideration and type groupings consciously selected if a workable typology is to be developed.

The type concept as discussed in this paper is the working tool of the cultural student—the device which is used to examine the most minute fragments of culture which the student can grasp. This tool is designed for the reconstruction of culture history in time and space. This is the beginning and not the end of the archeologists' responsibility. After culture history has been outlined various other methods of classification become possible and may be designed to measure different facets of the culture history. This, I think, is the place for classifications based on function as described by

Steward in the accompanying paper. For example, the functional classification which Gordon Willey (1953) applied to the prehistoric settlement patterns in Viru Valley, Peru, very neatly clarifies the history of this aspect of culture and permits comparison with the growth of communities in other parts of the world. However, the necessary prelude to this study of Willey's was the strictly morphological classification of thousands of potsherds.

JAMES A. FORD, *American Museum of Natural History*

NOTES

[1] I wish to thank Alex Krieger, Philip Phillips, Gordon Willey, Julian Steward and Irving Rouse for reading the manuscript of this paper and making a number of helpful comments. The title is a bow to the late Clarence B. Moore who frequently revisited prolific archeological sites.

[2] This is comparable to what Irving Rouse and others have done when they have utilized ceramic traits as bases for comparison. Rouse termed such elements "modes."

[3] "Apparent complexity," for all these levels are infinitely complex and it is the limitation of the observer's ability to perceive differences that set the limits. Ehrich (1950:468–81) gives an able discussion of this matter.

[4] Milke 1949. The word "Quantitative" in Milke's title refers to the numbers of items in the compared cultures which are similar to the reference culture—not to relative popularity.

REFERENCES CITED

BREW, J. OTIS
1946 Archaeology of Alkali Ridge, southeastern Utah. Papers, Peabody Museum of American Archaeology and Ethnology, Harvard 21.

EHRICH, ROBERT W.
1950 Some reflections on archeological interpretation. American Anthropologist 52:468–82.

FORD, JAMES A.
1952 Measurements of some prehistoric design developments in the southeastern states. Anthropological Papers, American Museum of Natural History 44, Pt. 3.

KLUCKHOHN, CLYDE
1939 The place of theory in anthropological studies. Philosophy of Science 6, No. 3: 328–44.

KRIEGER, ALEX D.
1944 The typological concept. American Antiquity 9, No. 3:271–88.

KROEBER, A. L. and CLYDE KLUCKHOHN
1952 Culture, a critical review of concepts and definitions. Papers, Peabody Museum of American Archaeology and Ethnology, Harvard 47, No. 1.

LOTHROP, S. K.
1926 Pottery of Costa Rica and Nicaragua. Vol. I. Contributions, Museum of the American Indian, Heye Foundation, New York.

MILKE, WILHELM
1949 The quantitative distribution of cultural similarities and their cartographic representation. American Anthropologist 51:237–52.

PHILLIPS, PHILIP, JAMES A. FORD and JAMES B. GRIFFIN
1951 Archaeological survey in the lower Mississippi alluvial valley, 1940–1947. Papers, Peabody Museum of American Archaeology and Ethnology, Harvard 25.

ROUSE, IRVING
1939 Prehistory in Haiti, a study in method. Yale University Publications in Anthropology, No. 21.

SPAULDING, ALBERT C.
1953 Statistical techniques for the discovery of artifact types. American Antiquity 18: 305–13.
TAYLOR, WALTER W.
1948 A study of archeology. American Anthropologist 50, No. 3, Pt. 2 ("American Anthropological Association Memoirs," No. 69).
WILLEY, GORDON
1953 Prehistoric settlement patterns in the Virú Valley, Perú. Bureau of American Ethnology, Bull. 155.

Types of Types

These comments are intended to extend Ford's excellent clarification of "type" by distinguishing several meanings of the term and showing that each has special significance relative to problem. I am concerned here with four meanings of "type"—there are, of course, many other meanings—which I shall designate as "morphological," "historical-index," "functional," and "cultural." The same cultural phenomenon may be classified as any or all of these types. Ford illustrates his points with the imaginary people of the island of Gamma-gamma. Although the illustration is ethnographic, the heuristic meaning of his types applies more often to archeological than to ethnographic problems; for Ford's types are those I designate "morphological" and "historical-index," being used primarily to determine the time-space occurrence of cultural phenomena.

The "morphological" type is the most elementary kind, since it is based solely on form—on physical or external properties. When the use or cultural significance of an object or practice is unknown, a descriptive label is necessary. Thus, "stone balls" which characterize the Northern Periphery of the Anasazi area is a taxonomic label, which, to quote Ford's remark to me, represents the lowest order of archeological procedure. What were proved later to be ball courts in Arizona were at first classed under such noncommittal headings as "large, basin-like depressions," which, for all that anyone knew, might have been dance plazas or reservoirs.

The second, or "historical-index" type, is defined by form, but, whereas the morphological type is considered as a characteristic of the culture, this second type has chronological, not cultural, significance. It is a time-marker. Pottery is an outstanding example of this second type. Although pottery is of course a part of the cultural inventory, its various elements such as clay, shape, design, and the like which combine to define ceramic types are widely used to distinguish chronological and aerial differences. That is, changes in ceramic styles, like changes in soil types, pollen count, frequencies of key flora and fauna, and other means of dating, have noncultural significance. Many other cultural features may be used as historical indices. The lithic complexes of the Folsom, Yuman, Silver Lake and other early periods include projectile points which strongly indicate that hunting with spears was an essential feature of the cultures. But while the forms of the projectile points in

no way suggest different methods of hunting or different roles of hunting in the total culture, they have become crucial time-markers of culture periods.

Functional types are those based on cultural use or role rather than on outward form or chronological position. The same materials may be treated in terms of functional type or of morphological type. When preoccupation is with the latter, a monograph is likely to describe objects under major headings such as "Stone," "Bone," "Wood," and the like. A functional treatment uses such categories as "Weapons," "Food Preparation," "Clothing," and so forth. The former is inevitable in so far as the cultural function of many objects is unknown. But convention lingers as a determinant of typology in that functionally identifiable objects are still classed in terms of material and shape.

An important argument for use of morphological and chronological types is that the principal task—or at least the first task—of archeology is to ascertain the time-space occurrences of its cultural data and that interpretation of development must be a later step. While in general this is true, it should be stressed that the cultural significance of a functional type may be crucial to historical reconstruction. For culture history consists not merely of determining the time and place occurrence of objects, but of tracing their origins, movements through space, and changes through time. A purely morphological and historical-index typology may serve only the first purpose, for it is, as Ford points out, relative to period and area. A house typical of Gamma-gamma is atypical of a larger group of islands, and one typical of a certain period may not represent the type of later periods. The value of the type in reconstructing history is thus vitiated. For type ceases to be fixed and identifiable and instead becomes relative to time and space. If type is conceived in the historical-index sense as a means of arranging phenomena in time and space, there is the inevitable dilemma that types cannot define areas or periods nor can areas and periods define types in an absolute sense, each being relative to the others.

Considerable disagreement in cultural classification arises from this dilemma which itself results from failure to distinguish between quantitative and qualitative criteria. The question of "how different is different?," whether applied to pottery types or whole cultures, becomes an unresolvable dispute between the "splitters" and the "lumpers." To be typologically different must an object or a culture be 10 per cent or 90 per cent distinctive? Where shall one draw the line at classifying an area like the Southwest in an increasing number of temporal and areal subdivisions? Does Mogollon warrant status as a separate and major culture? Does Gamma-gamma have one or several house types?

Anthropology as a cultural science deals essentially with phenomena which are conceived qualitatively. Measurable features serve to indicate deviation from the norm in a particular culture and to show transition from one culturally defined norm to another. But a culture must be characterized qualitatively before its features can be quantified. The time and place occurrence of cultural features can be defined quantitatively in terms of historical-index

types, but the impasse of classifying cultures and reconstructing culture history can only be resolved by introducing functional criteria into the definition of type.

The history of the houses of Gamma-gamma illustrates this point. The houses exhibit a wide range of morphological features, which, treated quantitatively, yields an historical-index type that is relative to time and area but unrevealing as to history. Emphasis upon function, however, would give primary importance to selected features and permit historical hypotheses. For example, since all the houses are of pole-and-thatch construction, one might conclude that the general features are a very old adaptation to a rainy, tropical area. But some houses are built on piles and some are not. If parts of the island were swampy or if the people were subject to attack, pile dwellings might have been developed locally in response to one of these needs. In the absence of these factors we should conclude that two groups of people settled the island—pile-dwellers and ground-dwellers.

From a functional point of view, the importance ascribed to pile construction is such that it would be a primary qualitative criterion in typology and not merely one of many coequal features. The historical implication of this functional typology is clear also in the case of ball courts in the Southwest, where knowledge of function as well as form immeasurably strengthens the assumption of Meso-American origin of the trait. The present difficulties in interpreting the origin, spread, and changes in kivas in the Southwest arises largely from uncertainty as to function and the consequent need of basing the type on form. Early kivas are so different from dwellings in certain crucial structural features that the presumption of their ceremonial use seems safe, and modern kivas are known to be different in both form and function. But there are many special rooms which are different from dwellings, yet lack the distinctive structural features of kivas; and modern kivas are not identical with earlier ones. The question, then, is whether the concept of "kiva" is based on form—on features such as ventilators, deflectors, sipapus, etc.—or on function. In the latter case it should mean more than merely "ceremonial room," for there are such rooms which are not kivas. Does it then signify a room used by a lineage (Basket Maker and early Pueblo), by religious societies and a tribal kachina cult (Western Pueblo), or by moieties and societies (Eastern Pueblo)? If the history of the kiva is to be known, it is obvious that a functional as well as morphological typology must be used.

A functional conception of type not only would serve to clarify culture history within local areas but it would have value in cross-cultural comparisons. Anthropology has a loose vocabulary of words designating cultural features wherever they are found—for example, clan, moiety, shaman, and so forth. But none of these words has the precision of meaning that one might expect in science. The effort to establish types of cross-cultural significance has been thwarted largely by the importance ascribed to form. If, however, function is given equal importance, the way is opened for fruitful comparative

studies. Thus, while ritual kinship in Latin America, blood brotherhood in Africa, and extended kinship in China are morphologically very different, they all serve many similar functions and might be subsumed under a type which would imply functional and processual similarities.

My fourth type, the culture type, ideally would represent a classification of whole cultures in terms of the functionally most important features. This will be considered in a later paper.

The purpose of these comments is not to admonish that greater use of function be made in establishing types; for in archeology especially there are obvious limitations on knowledge of function. The purpose is simply to amplify Ford's clarification of the concept of type so that the implications of cultural historical procedures in anthropology may be more explicit. Functional types cannot be established in terms of universal features, nor do they have objective reality. To the contrary, substantive types of heuristic utility must be postulated provisionally, gradually, and always with reference to the historical problem.

JULIAN H. STEWARD, *University of Illinois*