A LOGICAL SEQUENCE OF ARCHAEOLOGICAL OBJECTIVES

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ABSTRACT

A series of seven idealized levels of procedure in conducting archaeological research is proposed: preparation, acquisition, analysis, interpretation, integration, comparison, and abstraction. This scheme was employed to investigate archaeological phenomena from Lava Beds National Monument, northern California.

A NECESSARY activity of archaeologists is the preparation of "site reports." The format of such reports has been formalized and standardized as modern archaeology has developed. The purpose of this paper is the fomulation of a conceptualized methodological framework which makes explicit the objectives and procedures implied in site report organization. Rouse (1953: 57) uses the term *objective* "to refer to the end product of any particular segment in the procedure of cultural–historical research." Rouse's usage is employed here. A procedure is the activity required to achieve a specified objective. This framework was successfully applied in studying archaeological material from Lava Beds National Monument, California (Swartz 1964, 1967).

In discussing the procedures of archaeological research in general, Rouse (1953: 58) dichotomizes the strategy of culture history into two alternative approaches: "One is to devise a rigid, all-inclusive program of research, in which one objective follows logically upon the previous one until the ultimate, most important objective is reached. The other . . . treating each objective as if it were of equal importance for building up the cultural–historical approach." Rouse suggests that Taylor is an advocate of the first alternative (Taylor 1948: 133) and that he himself pursues the second alternative. Recently Rouse (1965) has formalized his approach, listing three "procedures" and four types of objectives. Although I feel that these two approaches are supplementary, in this paper the rigid "all inclusive program of research," rejected by Rouse, will be considered. Mayer-Oakes (1966) has proposed another type of model for archaeological procedures, anguilineal, rather than Rouse's (1965) multilineal or my rectilineal schemes.

A basic sequence of archaeological objectives, logically ordered, appears justified at a generalized level. There is basic to all fields of knowledge a common set of procedures — the historical and scientific methods. Research is seen to proceed from the formulation of a problem or definition of an ultimate objective, the acquisition of data, analysis, interpretation, and then synthesis and comparison. In the strategy of culture history, rigidness refers to this accepted procedure, and inclusiveness to its applicability to the full range of archaeological objectives. Indeed, a similar set of procedures has been proposed by Phillips (Willey and Phillips 1958: 4): Field Work, Culture–Historical Integration, and Processual Interpretation. The sequence of generalized procedures proposed in this paper is Preparation, Acquisition, Analysis, Interpretation, Integration, Comparison, and Abstraction.

Each of these procedures has a principle goal or objective, and of course, numerous smaller ones which can be pursued independently, every approach being investigated until all avenues are exhausted. Recognition of this fact on the analytic level is noted by Brew (1946: 65) who pleads for more — not fewer, classifications. These subsidiary, independently pursued, objectives may cross-cut the idealized, basic, logically ordered procedures, but such occurrences are of a practical consideration and need not conflict with the larger primary objectives.

The content of this paper, because of the investigative approach utilized, will be uneven as to the novelness of ideas. In order to make clear how procedures operate, the trite and obvious are complemented by what I view as the new and unique.

PREPARATION

Preparation is the acquainting of oneself with the nature and scope of the archaeological problem or basic objective to be resolved. The nature of archaeological problem formation is well stated by Mayer-Oakes (1966: 10, order of presentation altered):

> . . . We can see that there are two main problem orientations currently characteristic of scholars in archaeology. We dichotomize these into the "sponge" or all-inclusive orientation or approach and the "selective" or narrower orientation. At this point a fact of life to archaeologists rears its head. The fact is the "one-time" nature of the raw data with which archaeologists must deal. Because archaeologists must dig and thus destroy in order to read the basic record left them by past cul-

tures, all field workers have the responsibility and obligation to observe, record and collect data as completely and thoroughly as the appropriate techniques allow. This may be in conflict with a particular, limited problem interest, but is a fundamental qualification to the concept of relativity with regard to problem formulation.

Fundamental to the preparation procedure, then is an academic or professional sincerity in viewpoint.

There are two aspects of preparation: (1) survey of work already done, and (2) preparation for the technical problems of field work. The preliminary survey of the existing material for the area differs from reconnaissance, as used in acquisition, in that it precedes actual field work.

The goal of surveying previous work is to gain a broad knowledge of the entire area in which one is working by surveying all pertinent material, in other words, published accounts, including previous local archaeology and the local ethnography, geology, botany, and zoology and also data obtained from the region by museums and collectors.

The goal in organizing an expedition is to locate a qualified crew with suitable technical equipment at a specific spot. Among the problems involved in such a task are the securing of permissions and funds, transportation, adequate housing, food, and choice of training of personnel. Schwartz's (1961: 533–45) concept of *logistical accounting* is concerned with this aspect of preparation.

ACQUISITION

Acquisition is the mechanical process of deriving data from the field for later study and analysis. Theoretically it is useful to separate acquisition from analysis and interpretation, but on a practical level they often proceed simultaneously. For example, it is often impossible for an excavator to avoid recognizing an artifact that has been collected as a projectile point. In general, acquisition is a field activity, while analysis is done in a laboratory.

The two main operations under acquisition are collecting and recording. Ideally, collection includes the obtaining of objects, while records include the graphic and written description of phenomena collected, exposed, or observed in the field. However, the simultaneity of these operations must be stressed here. Graphic records are of two kinds, photographs and sketches. In theory, the order of procedures in the acquisition of data is from the general or region, to the particular or specimen (Table 1). Proceeding in this order, Fragile-Pattern areas (Hayden 1965) can be recorded before they are irrevocably disturbed. Although this order of presentation will be followed here, in reality this sequence does not always occur. For example, the Pioneer phase of the Hohokam was discovered not from the preliminary survey in the area, but from intensive stratigraphic excavations at a particular site, Snaketown (Haury, personal communication, 1963).

The first step is to deal with collections which are acquired by reconnaissance. The results of reconnaissance can be broken down into natural and cultural divisions. The term "natural" refers to objects not modified by human agencies, and "cultural" to those which are so modified. Natural remains acquired by reconnaissance include landscape specimens, either faunal, botanical (Fosberg 1960), or petrographic. Cultural remains include site records and surface collections of portable artifacts. As reconnaissance is done, regional records, consisting of graphic and written descriptions, are obtained. Maps are produced, either by ground or aerial survey. The results of recording are again broken down into natural and cultural. The results dealing with natural phenomena are physiography, which is important for ecological interpretation. The cultural results are concerned with cultural phenomena and consist of data bearing on demographic distributions.

The next order of procedure is the investigation of sites. The method used is normally excavation, with the results again being divided into natural and cultural. The former include collections of paleontological specimens and soil samples (Taylor 1957), and the latter, cultural features. The natural specimens are important in determining such factors as climatic change, seasonal occupation, group food biases, and butchering techniques (White 1952, 1953, 1954). The cultural records obtained at this time are settlement patterns (Willey 1953; Trigger 1967). In the past, archaeologists have tended to neglect this intermediate level of procedure, and it is felt that more notice should be given to this approach in the future.

The last level of procedure deals with specimens. Here collections are made by the physical processes of extracting and assembling specimens. The emphasis in excavation is stratigraphic and within the site, rather than aerial or beyond

TABLE 1. SEQUENCES OF ACQUISITION PROCEDURES

	COLLECTING		
	METHOD	RESULTS NATURAL	RESULTS CULTURAL
REGION	Reconnaissance	Landscape specimens	Sites and surface collections
SITE SPECIMEN	Excavation	Paleontological specimens and soil samples	Features Portable artifacts
	RECORDING		
	METHOD	RESULTS NATURAL	RESULTS CULTURAL
REGION SITE SPECIMEN	Graphic and written description	Physiography Soil profile Context	Demographic distributions Settlement pattern Content

the site. The collections obtained are natural (paleontological specimens and soil samples), and cultural (portable artifacts). Of course, graphic and written records are also obtained. The written records should include such cataloging and labeling of specimens as is needed for close correlating with field records, and such detailed notes on associations as are stressed by Taylor (1948: 152–202). The natural–cultural dichotomy, as used above, cannot always be applied in the study of associations, since, for example, artifacts may be associated in a natural stratigraphic deposit, or, as occurs in the Southwest, natural fossil fetishes may be contained in artificial leather bags.

ANALYSIS

To understand the distinction made in defining these terms, the difference between analysis and interpretation must be made clear. Analysis is the procedure whereby archaeological data are placed in a framework of time and space; it is the initial step in the studying of archaeological materials obtained in the field (Brainerd 1951: 302). Analysis, as here defined, may be considered to be distinct in its purposes and goals from cultural reconstruction, for which it provides the required temporal–spatial ordering. Analysis, then, can be seen as the manipulation of masses of archaeological data for the purpose of deriving temporal–spatial order. Such order must be accompanied by classification, the procedure by which manipulable units, essential for demonstrating similarities and differences through time and space, are formed (Osgood 1942: 22). These units need not necessarily have cultural significance.

The basic unit employed in archaeology is the *attribute*. An attribute is any quality or aspect of material manifestation that can be ordered or described. As Spaulding points out (1960: 61) an

> attribute may be one of a continuous group, a measurement of length . . . or a discrete quality, as in the case of observing that an object is made of bone. . . . [It] may be a physical or chemical property . . . weight, shape, chemical composition, etc.

Krieger's term *feature* (1944: 286) is equivalent to an attribute.

Attributes that are diagnostic temporal–spatial indicators are here termed *modes*. The concept of mode was introduced into the literature by Rouse (1939: 11) and is equivalent to Krieger's *character* (1944: 286). Rouse would limit mode to include only attributes with cultural signifiance, while I would exclude attributes with cultural significance that possessed no time–space implication.

> By the term "mode" is meant any standard, concept, or custom which governs the behavior of the artisans of a community. . . . Analytic classification, then, must single out modes which are cultural, and exclude those traits [attributes] which are purely biological, chemical or physical (Rouse 1960: 313–14).

It is conceivable, though perhaps improbable, that an attribute may have temporal–spatial significance, but no cultural significance. For example, unknown to a community of potters, a macroscopically imperceptible alteration might naturally occur in a clay deposit that is microscopically detectable to an archaeologist when

incorporated into a pottery form. Such an alteration could quite likely be sensitive to change in time and space. An attribute caused by this clay alteration would have no cultural significance if imperceptible to the potters on a conscious and subconscious level.

Another unit used in archaeology, but seldom formally defined, is a *class*. A class is simply a group of artifacts sorted together as a unit by similarity of appearance. Class as used here differs from Osgood's meaning (1942: 22) which is restricted to a group of artifacts manufactured from the same material. Daugherty's term *form* (1962: 4) implies that shape or form is the only criterion used, and therefore, is not employed here. A class, a group of classes, or a subclass, that successfully serves as a diagnostic temporal–spatial indicator is a *type*. A type, like a mode, need not have cultural significance. This use of the type concept conforms with Steward's (1954: 54) Historical-Index Type. In essence, a type is nothing more than a related set of recurring artifact-bound attributes. Spaulding (1953) and Shepard (1956) have implicitly extended the concept of type to include clusterings of attributes, statistically derived, independent of artifact classes. I believe that this does violence to the typological concept and that such a term as attribute-cluster would be more appropriate.

Gross differences between excavation units representing different components of distinct persistent differences of large samples of artifacts of a simple or basic nature are best detected by typological analysis. More subtle differences within component units, or with small collections of artifacts sufficiently elaborated so as to provide stylistic variability, are best detected by modal analysis.

In the use of types for time–space placement, the relationship of attributes that comprise an artifact must be considered. It is this relationship that provides an artifact with its distinctive flavor and makes possible its classification with a type. Types not only consider the occurrence of artifact-bound sets of attributes, but also their relationship to one another necessitated by shared artifact existence. This added dimension of the type, not present for isolated modes, makes it very important as a time-saving sorting device. Besides this, the use of types for time–space alignments is conventional in archaeological literature and provides a large body of comparative data amenable to larger synthetic studies.

If one proceeded in an ideally inductive manner, he would identify and record all recognizable attributes of a collection of artifacts, since classes are on a higher level of abstraction. By temporal–spatial grouping, modes could be extracted. The next step would be the sorting of artifacts into classes and then the relating of attributes to these classes for type descriptions. Here a conflict between ideal and practical procedure occurs. Most attributes occur in artifacts. To avoid processing the collection a second time, it can be initially sorted into classes, which can then be described for class range and attribute identification simultaneously.

Additional time–space data, primarily associational rather than formal in nature, can be obtained from non-artifactual materials such as midden components (not to be confused with occupational components as used below) and faunal and floral remains. Distinctions between attributes and classes are based on artifactual remains. Confusion is caused if this terminology is extended to non-artifactual materials. In Swartz (1964, 1967) they were treated separately on the analytical level.

The association of a cluster of modes or of a group of types in geological context within a single site is here defined as a *component*. The concept of component was introduced into American archaeology by McKern (1939: 508). "The manifestation of any given focus [see below] at a specific site is termed a component of that focus." Often, in general parlance, the term *occupation*, and in California the term *settlement* (Heizer 1958: 99, 100), are used as synonyms for McKern's component.

A component, or group of components, in a limited region or zone, occurring within a restricted timespan that possesses modes or types sufficiently characteristic to distinguish it from all other similarly conceived units, is here termed a *phase*. This term was first conceived by Gladwin at the 1931 Gila Pueblo Conference (Olson 1962: 459), and it is equivalent to the concepts of *focus* in McKern's Midwestern Taxonomic System (1939: 308), *facies* in California (Heizer 1958: 99, 100), and *assemblage* as used in Old World paleolithic archaeology (Braidwood 1946: 136). Although material-culture units quite likely will fail to coincide with social units, the comparison of components to Murdock's communities and of phases to pre-state societies (tribes or villages) is suggestive (Willey and Phillips 1958: 49–50).

In general, I concur with Willey and Phillips (1958: 40–1) that the phase is the largest inductively integrated whole culture unit of manageable proportions for archaeological analysis. However, larger units, termed *cultures*, comparable to McKern's aspect, have been usefully employed by Ritchie (1965). They propose, however, two integrative ordinates that enable syntheses of portions of phase units into broader temporal–spatial dimensions — the *horizon* and the *tradition*. Paraphrasing Willey and Phillips and inserting the nomenclature proposed in the preceding discussion, a horizon can be defined as a spatial continuity represented by modes and types whose nature and means of occurrence permit the assumption of their broad and rapid geographical spread; a tradition is a temporal continuity represented by modes and types whose nature and means of occurrence permit the assumption of their gradual and persistent development within a narrow geographical range. The use of tradition should not be confused with the "full culture" tradition often utilized by archaeologists to circumvent the amorphous term of "culture" in describing archaeological manifestations.

Archaeological *collections*, temporally–spatially ordered, are here termed *complexes*. Complexes are portions of phases that share some common mode, or are partitive units of such interrelated segments. Braidwood's term *industry*, used in Old World archaeology (Braidwood 1946: 136), is similar in concept to complex. Distributions of specific modes and types can also be plotted on the ordinates.

Two types of temporal placement are generally recognized and termed by most archaeologists as relative dating and absolute dating (Heizer 1953: 4). Relative "dating" is the temporal placement of events in association with one another. No fixed point in time is used as a referent. Because of this fact actual "dating" is impossible. One can say that a particular event occurred before or after another, but one cannot say that a particular event occurred at a certain point in time.

"Absolute dating" is not absolute in the strict meaning of the word. An absolute date can only be expressed as a metaphysical concept of a momentary existence, and it cannot be empirically measured. Also "absolute dating" need not be expressed as a date, but also as an age. For example, A.D. 1492 is a date, but 475 years ago (or B.P. — before present, as often used in radiocarbon designations) is not a date, but an age. To avoid these terminological misnomers, Smiley (1955: 18) suggests the terms *relative placement* and *time placement* for relative and absolute dates respectively.

There are two methods for determining relative placement, stratigraphy and seriation. Stratigraphy is the relative placement of events by depositional association. As pointed out by Phillips, Ford, and Griffin (1951: 241), stratigraphy should not be confused with stratification. The latter refers only to the physical processes of deposition and involves no theoretical implications. Stratification may be natural in that the layers of deposit, or strata, are visible, or it may be metrical where they are not visible.

The stratigraphic method is based on two principles, superposition and identification (Rowe 1961: 324). The principle of superposition states that a deposit that overlies another deposit is younger in age. Superposition need not be only vertical, but it can be largely horizontal, as long as overlapping of deposits occurs; or it may even be reversed through redeposition by human agency (Hawley 1937). The principle of superposition was first formulated by Nicolaus Steno in 1669 (Heizer 1962: 4–5), and it was first applied to archaeological problems by Thomas Jefferson in 1782 (Rowe 1961: 324). The second principle, identification, states that deposits in various regions can be temporally correlated by use of specified diagnostic keys, such as fossils or artifacts, incorporated within them. The first application of identification was by John Smith in 1796, and, according to Rowe, it was not utilized by archaeologists until mentioned by G. C. F. Lisch in 1847 (Rowe 1961: 324). The compilation of the European paleolithic sequence by Gabriel de Mortillet in the late 19th century was accomplished by the application of this principle.

Conventionally stratigraphic relationships have been noted macroscopically by observing such phenomena as geological composition and fossil and artifact occurrence. The use of microchemical and microphysical observations can also provide important stratigraphic information and make more precise macroscopic distinctions. The most notable achievements along this line are pollen analysis and Oakley's (1948) work on measurement of fluorine content in fossilized bone.

The second method, seriation, is the relative placement of events by the comparison of fre-

quencies of various mode or type similarities. This method is based on the assumption that a mode or type will appear, gradually increase, then decrease in frequency, and will eventually disappear, never to reappear again. To be certain of which direction a seriational sequence moves through time, some associational referent is necessary (*similarly seriation*, according to Rowe 1961: 326). Unfortunately, preconceived ideas of evolutionary development, such as crude to refined or simple to complex, *evolutionary seriation* (Rowe: 1961: 324) may be invoked. Rather precise placement can be achieved by analyzing large, diverse samples of at least somewhat elaborated artifacts with intensive statistical techniques. The most ambitious attempt of this approach to archaeological data is the Brainerd-Robinson seriation matrix (Robinson 1951; Brainerd 1951).

Time placement can be accomplished by using historical records, historical time placement or calendrics, or by studying natural phenomena, natural time placement. If some aspect of natural phenomena is discovered that alters at a constant rate, it can serve as a clock to age or date an associated event. Tree-ring and radiocarbon techniques are the most successful in this field for placement of archaeological material. Time and relative placement can work together (for example, the discovery of a specific condition at the time an event took place). The condition must then be related to some constant natural change (as with widespread volcanic deposition or paleomagnetism) or be recorded historically (for example, accounts of astronomical phenomena such as eclipses).

INTERPRETATION

Procedures of interpretation do not actually follow upon the previous objective of time–space framework formulation, but rather they start at the same time as analysis, utilizing the additional data of analysis, but directing these data to a different goal. The goal of interpretation is to discover how an assemblage of artifacts was manufactured and used at a certain place and at a specific time, it is not the ordering of data temporally or spatially. Although interpretation as an activity is also employed at other levels of procedure (for example, chronological interpretation), here use of the term will be restricted to cultural reconstruction. A comprehensive interpretation procedure cannot be performed until after analysis has identified a temporal–spatial unit so that an artifact inventory can be determined. Interpretation from a single site assemblage is possible and is a common archaeological procedure. Such interpretation may be quite misleading, however. For example, think of the distortions possible in interpreting a site only seasonally occupied.

The bulk of direct evidence on cultural evolution has been derived from data interpreted from archaeological remains. Awareness of the value of interpretation is largely incipient, however. This lack of emphasis was pointed out by Steward and Seltzer (1938) and was strongly indicted by Taylor (1948).

Epistemological considerations of archaeological interpretation have been examined by Thompson (1958). Archaeological interpretation is the result of the inferential process which proceeds in two steps, indication and testing. Indication is that activity of making indicated conclusions from observed indicative data. Testing is that activity of making inferences by analogy of indicated conclusions with probative data. The inferential process is operative on the analytic level, but it is presented here since it is at the interpretative level that the final results of inference become manifest.

The most reliable probative data are associations. From the relative position of two or more objects with one another, or with one or more objects with some significant natural feature, valuable probative data can be obtained. For example, if red ocher is found adhering to the grinding surface of a palette, the inference that the palette served as a device for preparing red paint pigment seems plausible. Interpretation of this type corresponds to Taylor's "Conjunctive Approach" (Taylor 1948).

Less reliable are ethnographic data obtained in the same area as the archaeological materials. Best results of this type of data can be obtained if the archaeological material is not too early in time, and if recent conquests and invasions have not occurred in the same area. If these conditions are met, it can be assumed that there is historical continuity between ethnographic practices and archaeological evidence. Interpretation in this situation has been termed the "Direct Historical Approach" by Steward (1942).

Local ethnographic data are often unobtainable. Attention should be given to finding ethnographic analogs from societies with similar subsistence levels and habitats. This type of comparison is called the "New Analogy" by

Ascher (1961a). Of course if data of this nature are unavailable, other ethnographic data must be relied upon.

If ethnographic data are unavailable or poor, "Experimental Analogy" (Ascher 1961b) can be utilized. Valuable inferences on chipping techniques of paleolithic tools have been obtained in this manner (Semenov 1964).

The smallest units in interpretative significance are here termed *elements*. Linton's concept of *item* (1936: 397) is comparable. Elements fall into two basic categories, manufacturing techniques and uses of objects. There are three types of manufacturing techniques: (1) selection of materials for manufacture; (2) manufacturing of objects by reduction, that is, the removing of matter from an original piece of raw material; (3) manufacturing of objects by construction, combining raw materials to build a qualitatively distinct form. The analytic counterpart of an element is an attribute.

Uses may be either dynamic (that is, a moving action is required in its employment) or static. Also, uses may be utilitarian (required for maintaining a livelihood) or nonutilitarian. A description of the manufacturing techniques and of the uses of an assemblage of artifacts provides the techniculture (Osgood 1942: 33) of a community.

A larger synthetic unit is the *trait*. A trait differs from an element in that a "unit of observation" is implied (Wissler 1923: 50). In archaeology, due to the nature of the materials studied, a trait acquires a more formal aspect. Traits are simply "functional types," classes of artifacts grouped together on the basis of suspected common use. Functional types seldom coincide with analytic types, which are defined on temporal–spatial bases.

INTEGRATION

There are two aspects of integration: reconstruction and synthesis. The objective of the first is to reconstruct, as completely as possible from inferential data, how a group of people lived in a certain place and at a certain time. On the other hand, synthesis is the procedure by which larger culture-content units, of a taxonomic nature, are formulated and described.

In integration the outlook is historical in that it attempts to reconstruct and synthesize data rather than being scientific, which atomizes data and manipulates them in order to discover processes. This distinction is well stated by Kroeber (1935: 545–6):

> I suggest as the distinctive feature of the historical approach, in any field, not dealing with time sequences — though that almost inevitably crops out where historical impulses are genuine and strong — but an endeavor at *descriptive integration*. By "descriptive" I mean that the phenomena are preserved intact as phenomena, so far as that is possible; in distinction from the approach of the nonhistorical sciences, which set out to decompose phenomena in order to determine processes as such. *History of course does not ignore process, but it does refuse to set it as its first objective.* Process in history is a nexus among phenomena treated as phenomena, not as a thing to be sought out and extracted from phenomena. Historical activity is essentially a procedure of integrating phenomena as such; scientific activity, whatever its ultimate resynthesis, is essentially a procedure of analysis, of dissolving phenomena in order to convert them into process formulations. (Emphasis added)

The basic unit of reconstruction is here called a *pattern*. This concept is similar to Wissler's "Universal Pattern" (1923: 73–98) and Reed's "Culture Category" (1958: 154) and should not be confused with McKern's (1939) use of the word as an analytic taxon.

Unlike complexes, patterns must occur at one time and place, that is, within a phase as defined by Willey and Phillips (1958: 22–3). The analytic procedure of defining a phase in space and time must precede cultural reconstruction of interpretative data into patterns. A description of the patterns of a phase constitutes, essentially, an "archaeological ethnography," or what Taylor calls "historiography" (1948: 31). Using the terms proposed in this paper, the following standardization of nomenclature can be proposed (Table 2).

As pointed out by Willey and Phillips (1958: 41–2), the largest manageable unit of cultural integration is the phase. It is felt, however, that on the interpretative procedural level, a larger taxon, based on culture formation processes, is possible. Such traits can be formulated by correlating three variables: (1) type of habitat, (2) areal distribution, and (3) subsistence level. These variables are not mutually exclusive in that wherever societies with simple subsistence economies are greatly affected by habitat, those with more complex subsistence economies are less so. With the development of posturban conquest states, habitat variables become negligible and historical–cultural factors, such as military conquest, become the prime considerations. Here areal distribution replaces habitat type for defining superphase units.

TABLE 2. A SUGGESTED STANDARDIZATION OF ANALYTICAL NOMENCLATURE

	General	*Analytical*	*Interpretative*
artifact-free, specific	*attribute*	*mode*	*element*
artifact-bound, interrelated attributes	*class*	*type*	*trait*
integrative, attributes and/or classes	*collection*	*complex*	*pattern*

Anthropologists, for some reason, have been little concerned with formulating large historically derived taxonomic units and have either resorted to outlining universal stages (Childe 1956, 1960; Willey and Phillips 1958) or to employing comparative studies in an attempt to discover cultural processes (Steward 1955; Hester 1962). In other words, emphasis has been put on studying cultural regularities, rather than uniformities. For this reason there is little terminology to draw upon in discussing historical super-phase units.

Beals and Hester (1960), using simple subsistence California ethnographic data, have formulated units which they term "Ecology Types." Their concern is with the cultural response within these types, however, and the term "Culture Ecology Type" would be more appropriate. Complex subsistence societies can be classified into what Steward (1955: 88) has termed "Culture Area Types." These two "types" of types can then be amalgamated into "Culture History Types," this term being used to designate superphase taxonomic units.

COMPARISON

The procedure of comparison is not a step developing out of integration, but it is an alternative approach to interpretative data. It is scientific in outlook, atomizing and manipulating data in order to discover processes.

> Cross-culture types consist of *culture cores* of those area [culture history] types which never recur two or more times in historical independence of one another and which represent similar levels of sociocultural integration (Steward 1955: 89).

In using this concept in archaeology, subsistence level would be more useful than sociocultural integration in that it can be more directly inferred from archaeological evidence. By utilizing the comparative method, regularities can be discovered.

ABSTRACTION

The ultimate goal of integration and comparison is the abstraction of general laws, or principles, from persisting uniformities and regularities. The focal point of anthropological study is *culture*. This concept can only be explained on its own terms. The relationships of culture and environment (of prime interest to the archaeologist), and of culture and the individual are illuminating to the human ecologist and the psychologist, respectively, but are of little significance to the cultural anthropologist on this final level of procedure.

The recognition of the abstract nature of culture was observed and termed "superorganic" by Kroeber (1917). This idea was further promulgated by White (1949). An abstraction is simply a constant, used to explain phenomena. Culture is used by the anthropologist to explain human behavior in the same manner as the concept of gravity is used by a physicist to explain the principles of falling bodies. Gravity does not exist, nor does culture. They are abstractions from reality. Examples of such formulations would be statements like "culture is learned," or it is "socially transmitted," etc. An example of explanation at this level, obtained from archaeological evidence, is increasing cultural complexity through time demonstrated, with exceptions (for example, by Meggers 1954), by the increasing quantity and diversity of artifactual remains found in more recent archaeological horizons.

Abstraction is the ultimate and final objective of archaeological and general anthropological research. The sterile nature of the ultimate indicates the need for further developing the field of culture history.

CONCLUSIONS

Two general conclusions become apparent in attempting to identify and order archaeological objectives for site report organization. The first is that an objective usually does not develop into the succeeding objective but, rather, establishes the necessary condition for the pursuance of the next objective. The procedures used to achieve each subsequent objective, therefore, are de-

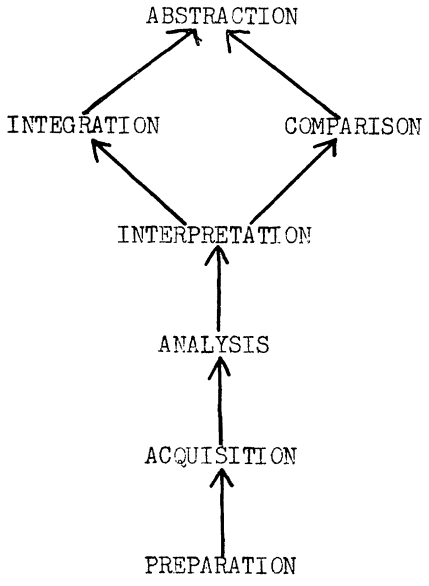

FIG. 1. A logical sequence of archaeological objectives.

pendent upon prerequisite conditions, not on prior development. The most critical example of this is the necessity of ordering temporally–spatially a phase, before the lifeway of the culture-bearers of that phase can be fully reconstructed. The procedure of reconstruction is not a development from phase placement, but it is a distinct procedure, operating only after the phase placement has been established.

The second conclusion concerns the feasibility of formulating a rectilineal sequence of generalized objectives. A complete ideal sequence may not be realized, however, since the integration-comparison level offers two alternative approaches (Fig. 1). What approach is to be emphasized will depend on the outlook and theoretical bias of the investigator.

Acknowledgments. I am indebted, primarily, to two sources for the theoretical framework of this article. The formulation of the problem, the distinction between analysis and synthesis (the latter here termed integration), and certain theoretical views on analysis are based on Dr. George W. Brainerd's ideas, to which I was exposed in a seminar he conducted at UCLA in 1954. The ideas on interpretation have been heavily influenced by my studies under Dr. Raymond H. Thompson, at the University of Arizona, from 1958 to 1964. The ideas expressed at the beginning of the discussion on dating are, also, essentially his views.

A modified segment of this paper entitled "A Suggested Standardization of Nomenclature in Archaeological Methodology," was delivered to the 80th Annual Meeting of the Indiana Academy of Science, October 30, 1964, Indianapolis, Indiana (Swartz 1965: 114–17), and the 30th Annual Meeting of the Society for American Archaeology, May 8, 1965, Urbana, Illinois. The writer values the perceptive observations offered by Drs. Irving Rouse and William J. Mayer-Oakes, but takes full responsibility for content and views. An earlier version of this work was read by Drs. Emil W. Haury and Raymond H. Thompson, who also offered helpful criticisms.

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May, 1967