

# The Relationship of Ethno-archeology, Traditional, and Systems Archeology

MICHAEL B. STANISLAWSKI

## Introduction

All archeologists use explanatory models in their work, and these are at least partially based on analogy. Many archeologists now think that the study of sounder methods of development of such models is the basic imperative of our field (e.g. Clarke 1973; Deetz 1970:121-2; Neustupny 1971; Tuggle et. al. 1972). In speaking of such explanatory models, the British archeologist D.L. Clarke believes that we do not yet have "... the appropriate procedures for judging and testing their accuracy, relevance, and logical adequacy . . ." (1973:15). Most important as regards our ethno-archeological emphasis in this paper, Clarke suggests that in any archeological theory model we must emphasize: a) the range of activities and social and environmental processes which once existed in a specific time and area; b) the way in which human and natural activities resulted in certain types of site deposition, re-use, erosion, and change; c) the survey sample and how it is recovered; d) the way the sample is analyzed; and e) the way that archeologists

establish models or experiments by way of making analogies.

A start was made by Thompson in 1958 who discussed the nature of inference (Thompson 1958); and Ascher (1961), Binford (1967), Dozier (1970); Gould (1973) and Stanislawski (1973b) among others have also discussed some of the problems in forming analogy models and drawing inferences between present and past social systems, institutions of culture, and groups. The vital point is that in *all* stages of our work from description of the data to explanation we do use models, and often historical-functional models: "Describing the finds one already needs some understanding of their human function . . . One chooses the properties worth studying on the basis of one's previous knowledge of the subject. Those who reject the idea and cling to the fallacy of 'full objectivity' built an uncontrollable amount of subjectivity into the very foundations of their further theories" (Neustupny 1971: 36-7).

## Theory

Such fields as ethnography and ethno-history seem to me to give us the most complete and most non-ethnocentric sources of information for explanation of archeologically observed clusters of artifacts and their correlations with social structure units. Mathematical, scale model, or general systems models may also be used in some circumstances, but they too depend on factual data and analogy in the begin-

ning (e.g. Williams 1971). If we can find all the information we need to reconstruct culture from the artifacts preserved for us in the ground, as modern systems archeologists often state (Binford 1968a), I believe we must still use data derived from the study of living peoples and their sites to suggest humanistic cultural explanations as to the meaning of the artifacts and their functions. This is as important a prob-

lem for social scientists as is the understanding of general systems.

In any case we must compare the fit of the explanatory model we select against the specific individual archeological situation. In the long run, we must all use some form of analogy in our explanatory models, and we will thus probably give some sort of general functional, or at least causal, explanation of the observed relationships (e.g. Hill 1970: 56 n.1; Johnson 1972: 370-1; Fritz and Plog 1970: 406-7; Longacre 1970: 3, 35; Watson et. al. 1971: 6). Most such explanations will have historical implications, too; for in the long run the explanation of a single site must include historical information as well as general cultural propositions. As Deetz, and Spaulding, and Trigger have said, there is really no important separation of history and archeology in the work of men in either the systems or traditional archeology schools (Deetz 1970: 115; Spaulding 1968; Trigger 1970). At the most it is a matter of different emphasis or different levels of goals

at a particular moment in time for each scholar. We are all potentially working toward the same ends: ". . . (historians) seek to employ rules to gain an understanding of individual (i.e. unique and non-recurrent) situations . . . Because the aim is to explain a particular situation in all of its complexity, not only does the application of such rules serve as a test of theory but, because a variety of different bodies of theory may have to be applied in conjunction with one another, historical interpretation serves as an inter-disciplinary arena in which the explanatory power of different theoretical approaches may be ascertained" (Trigger 1970: 30-1). Thus Trigger (1970: 35), Deetz (1970: 121-2); Binford (1972: 19), Gould (1973), Neustupny (1971), and myself, among others, seem to agree that to understand cultural processes and the structure and function of pre-historic societies, the information is best derived from the study of living societies and not the archeological record *alone*.

### Ethno-archeology

It is in this field of ethno-archeology (a term used as early as 1900 by J.W. Fewkes (1900: 579), that we may again see some of the most interesting work in archeology in the next decades. Early scholars, such as Jesse Walter Fewkes, were forced to do ethno-archeology as well as field archeology in order to try to put order and understanding into their striking and unique new data. In the present day, the new emphasis on explanation and the reconstruction of institutions of culture and cultural processes has brought back a new realization of the need for data concerning the relationships of man, tools, social groups and other aspects of the cultural system. An increasing number of archeologists are doing ethno-archeological field work in many world areas. Within the last decade, Lewis Binford, and others, were involved with work going on in the American Arctic (Campbell 1968); Canada (Bonnichsen 1973); the U.S. (Longacre and Ayers 1968; Stanislawski 1969a; 1969b; 1969c; 1973a; 1973b); Mesoamerica (Arnold 1971; Ascher 1962; 1968; Friedrich 1970; Lange and Rydberg 1972; Thompson 1958); South America (Arnold 1970; Donnan 1971); and in some quantity in Australia and New Guinea (Gould 1968a; 1968b; 1971;

Petersen 1968; White 1967; Lauer 1971); and in Africa (David 1971; David and Hennig 1972; Yellen and Harpending 1972). This is but a sample of the published material available, and in the field of ceramic studies, in particular, there are many others (e.g. see Matson 1965; and Nicklin 1971; for reviews of books or articles on this subject.)

Major questions asked in such publications as these concern: 1) the manufacture, distribution, use, meaning and function of artifacts; 2) development of the archeological site and its stratigraphic problems; 3) house construction, re-building, and re-use; 4) cognition studies, including typology and its differential meaning to the native worker and the archeologist; 5) meaning of and possible correlations of artifacts, architecture and settlement patterns and social structural units such as those of descent, residence, sodality, age, sex, rank-status-class, etc.; 6) innovations and change in artifacts and the relationships of such technological change to the society and their culture. In short, a general consideration of the use, limits and meaning of archeological inference and analogy.

## Field Work

In my own work, starting in 1968, I have attempted to study five or six such problems.

### Sites

There are eight or more ways in which ceramic artifacts are used, re-used and become part of sites (Stanislowski 1969a). I have shown that the re-cycling of old and new potsherds from site to house, house to house, and wall to wall, in modern pueblos can produce great complexity of stratigraphy.

### The Hopi Pottery Tradition and Ideas of Local Typology

In addition, evidence from 1969-1971 studies by my wife and I of Hopi and Hopi-Tewa potters has shown that decorative pottery types, as archeologists define them, are of little meaning to the Hopi. The Hopi instead emphasize vessel technology, form and function, size, ware, and schools of design (e.g. Smith 1971). Designs are sometimes individually "owned" or emphasized but are rarely if at all clan or lineage owned; they are frequently taught or "borrowed" across clan and family lines. Ceramic training, as a whole, freely occurs across clan lines and has done so at least since the 1870's among both the Hopi and the Hopi-Tewa of First Mesa. Historic documents indicate that Hopi ceramic production never ceased, but the tradition has strongly shifted in terms of village specialization since 1890. In the continuity of traditional designs, forms, and technology, the ceramic industry of the Mesas is still a native craft, little influenced by "western" influences.

### Ceramic Training Models

Recent research of my own (Stanislowski 1969c; 1973a; 1973b) indicates that there are at least four common models of pottery teaching emphasized in modern Hopi and Hopi-Tewa villages; mother-daughter; mother-in-law-daughter-in-law; mother-niece of different clan-neighbor-neighbor; and also at least eight other teaching model situations. While many mothers *do* teach their daughters, it is also true that it may be the grandmother in another clan who will instruct, an aunt in another clan,

a daughter-in-law, or even a male (for men do paint designs on pottery). All of these models may be involved in different stages in the life of one individual; and indeed, one should expect this, for many mothers do not make good pottery, are busy with young children, or are blind, divorced, or dead by the time of needed instruction. Analyzing one specific style of pottery (Hopi-Tewa Whiteware, developed since ca. 1920) I found that the style is now shared by women of at least 12 different Hopi and Hopi-Tewa clans, living in five villages and two settlements, and of two different linguistic or tribal groups. In fact, the most famous of the early Hopi-Tewa pottery makers, Nampeyo, was taught her craft by her Hopi grandmother (her father's mother) sometime before 1870 (thus before the reservation was established and before much Anglo influence). Thus not only do women learn a great deal from non-clan mates, but they continue to learn and change throughout their lifetimes, ultimately making several different types, wares or schools of design in pottery. Obviously a nearly blind old woman is going to paint in a different manner than when she was a young woman, or she may have her daughter or husband do her detailed work for her. Some pots are not even the result of a single individual's work, but are the result of a family or group: even a "potting bee" assembly line.

### Settlement Archeology

Furthermore, clans could probably not be localized in one area of the village in any case. They were not so localized as long ago as the 1880's (Mindeleff 1900; Parsons 1940). All Hopi houses go through cycles of building, use, abandonment, trash fill, re-clearing, re-use, etc. They may be sold or traded or left vacant for a time (Stanislowski 1973b). Clans fluctuate in size through time. In the last 70 years at least two Hopi-Tewa clans have disappeared, and one more is perhaps about to die out. In any town, then, clans are developing, splitting and dying out. Their housing needs are constantly rising, falling or disappearing. Land or houses near relatives fluctuate in availability. New rooms for one clan might be needed when the remainder of the village was decreasing in population. At best, only lineages or phratries might be localized, and even that only for a few

years (Parsons 1940; Stanislawski 1973b).

It is my conclusion that any past localization of ceramic design clusters, elements, or types, more probably resulted from the localization of the typical pueblo ad hoc work group, including both kin and non-kin; rather than from the results of the utilization of such highly idealized ceramic teaching models, residence, and descent rules as those suggested by Longacre and others.

For such purposes, then, I will define ethno-archeology as "the direct observation field study of the form, manufacture, distribution, meaning and use of artifacts and their institutional setting and social unit correlates among living, non-industrial peoples for the purpose of constructing better explanatory models to aid archeological analogy and inference."

Archeologists will have to collect this data for themselves, for modern ethnographers have not emphasized such material culture studies. Also, if the tool and social unit typologies are to be equivalent and comparable, both must be done by a single scientist, or at least from the same frame of reference. Thus the work may have to be done by an archeologist also trained as an ethnographer, or in a combined field school project that takes this dual approach. Only in this way may we be sure that the questions asked are directly relevant to the archeological problems; that the categories of classification are comparable; that the observer can elicit or observe both the ideal and real patterns of behavior; and that the full range and context of the materials, as well as individual and group variations, are included in the study.

Ethno-archeological studies, then, should have as much to offer the workers in the systems archeology school as they do the traditional archeologist. Such studies will better allow us to escape from our own ethno-centricism as we develop additional and alternative explanatory models for archeological testing. Archeological data, we have been told (Binford 1968a) never speaks for itself. Obviously it is we, as archeologists, who do the explanation by appeal to logic (common knowledge), general social background information, general ethnographic, or specific direct historical analogy (see Stanislawski 1973b). Then through the context of the objects, the formal characteristics of the material, and perhaps by testing, we make infer-

ences concerning their meaning and use (e.g. Thompson 1958). Or to briefly summarize and revise Neustupny (1971), we can obtain new knowledge from excavating specific sites, by applying the statistical models of natural sciences we can learn more about the artifacts and their co-variation and clustering; but it is mainly from fields such as history and ethnography (i.e. cultural and humanistic fields) that we can suggest realistic explanations in a human culture framework. In the long run, we are also testing the limitations of archeological inference; our own working limitations in actually reconstructing the ways of life of past societies now no longer functioning as a whole. We cannot always strictly apply analogies drawn from modern living peoples to explain the past. The criticism of some modern systems archeologists are probably correct when they say that such one-to-one relationships are neither possible nor adequate in most cases, for there must be some change from past to present. However, Binford and Binford also say "The expected relationships between material items and behavioral features of cultural systems are frequently most economically analyzed and tested with non-archeological data" (1968: 86); and, in the words of Lew Binford, "it may often be more impressive or scientifically more efficient in obtaining high levels of confidence to make such tests with ethnographic data" (1968b: 270). James Deetz clarifies this by noting that "more important perhaps are those analogues which exist in archeological and ethnographic data between material and behavior rather than between the artifacts — so many pots let's say, or so many projectile points — and the ethnographer's categories" (1970: 122). Ascher (1961) and Heider (1967) point out that there may well be more than one analogy model that may apply, for the archeological and ethnographic situation will often be highly complex and variable. Clearly people are just not as "reasonable" in real life as our anthropological models suggest that they are. The archeologist's and the native's cognitive systems and tool classifications thus often conflict, and native residence, descent, sex, and sodality systems may be far more variable than we, as scientists, like to admit (e.g. see Bonnichsen 1973; David 1971; Kehoe and Kehoe 1973; Heider 1967; Gould 1968b; 1971; Allen and Richardson 1971; Stanislawski 1969a; 1973a; 1973b).

## Conclusions

Archeologists must seek out and test all analogy model possibilities, and then select that one, or ones, of best fit in his particular situation. If our explanations are to be more than armchair theories, our models and their premises must be based upon the real world, and must be verified and tested before their use in explanatory hypotheses in archeological situations. We must use the theory of "multiple working hypotheses" (Chamberlin 1965) and realize that scientific *proof* is often impossible, and that *disproving* inadequate hypotheses is more reliable (Platt 1964; Salmon 1973). In particular, we must avoid the borrowing of scientific philosophies from other fields without very careful analysis and careful use (see: Clarke 1972; 1973; Johnson 1972; Tuggle et. al. 1972; Morgan 1973); and we must avoid the logical

pitfall known in scientific philosophy as "the fallacy of affirming the consequent" (Morgan 1973; Salmon 1973), i.e. that mistake often seen in modern archeology of believing that a verified prediction of a hypothesis also proves the accuracy of the premises of that hypothesis. Rather, it is a rule of logic that we cannot move backwards; the conclusions do not prove the primary statements (see Morgan 1973; Stanislawski 1973b).

It appears to me that systems archeology field and laboratory methods and models may bring a better scientific approach to archeology, but it is in the merger of field archeology, natural science methods, and particularly ethno-archeology that archeology can best contribute to the understanding and explanation of culture, past and present.

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