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Type and Attribute Analysis: Their Application to Iroquois Culture History

An accurate chronology is a prerequisite to the reconstruction of culture history and, therefore, the techniques used in arriving at the chronology are of vital concern to the archaeologist. The two techniques which have been most effective in establishing chronologies based upon artifacts are type analysis and attribute analysis. Both techniques, however, possess certain inherent strengths and weaknesses, and in view of the rapidly increasing body of data in Iroquois studies it is necessary to evaluate the relative usefulness of the two approaches in exploiting the full potential of these data.

The term "type" has acquired a number of meanings, but for the purposes of this paper it is regarded as "a group of objects exhibiting interrelated similar features which have temporal and spatial significance" (Ritchie and MacNeish 1949:98). An attribute is a qualifiable and, therefore, quantifiable single feature. Rouse's term "mode," which is regarded as an historically significant attribute and conforms to the four criteria of definition, invariability, frequency, and distribution (Rouse 1939:26-27), is implicit in attribute analysis as a technique for establishing chronologies. Innumerable attributes must be tested for their potential historical significance, however, and the success or failure of these tests will, in part, depend upon the comparative body of data and the intensity of the analytic method. It is thus necessary to record attributes before their historical significance can be accurately evaluated, and for this reason the concept of mode is incorporated into the more inclusive term "attribute."

A central tenet of current Iroquois research in archaeology is the *in situ* theory, which proposes that the historic Iroquois tribes, including the Huron, Petun, Neutral, Erie, and Susquehannock, evolved locally from a relatively common Middle Woodland base (MacNeish 1952: 89).

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The evidence of the theory is derived from seriated rim sherd types used in conjunction with the direct historic approach (MacNeish 1952; Ritchie and MacNeish 1949). Although many of the general proposals of the *in situ* theory have received qualified acceptance there has been criticism of the pottery types (Pratt 1960), and this dissatisfaction has been reflected in the supplementing of MacNeish's typology with attribute studies, revised pottery types, and new pottery types (White 1961; Pendergast 1964; Lenig 1965). As a result of new data there has been an understandable proliferation of pottery types as well as revisions of MacNeish's types. Some of the revisions retain the original pottery type name and incorporate additional attributes which are regarded as significant. Other revisions set up new types which incorporate all, or a portion, of the attributes represented in the earlier pottery type or types. Although such adjustments are a necessary reaction to the increasing body of data they are also responsible for a breakdown in communication whereby each researcher becomes involved in a myriad of local types, some of which are synonyms while others, having the same type name, possess different attributes. The continuation of such a process is almost unavoidable in type analysis and can only result in an increasing lack of communication between the various scholars working on problems of Iroquois prehistory — a situation that I believe all would agree is quite undesirable. It is in view of these problems that the following examination of the strengths and weaknesses of type analysis and attribute analysis is made in order to evaluate the relative worth of each technique in handling both the current and future bodies of data pertinent to Iroquois prehistory.

TYPE ANALYSIS

The strengths of type analysis are the reduction of a large body of data to manageable proportions and the expression of general time/space relationships which allow the formulation of chronologies and the tracing of patterns of cultural change.

The weaknesses of type analysis appear to be five-fold. First, the type, consisting of certain specific attributes, tends to "pigeon-hole" the individual attributes whose trends extend beyond the type, thereby disrupting continuities in time and space. This weakness is particularly troublesome when attempts are made to trace the evolution of Iroquois ceramics from Middle Woodland ceramics, and a researcher must work with two or three rim sherd typologies (Iroquois, Owasco, Point Peninsula, or equivalents). Second, the range of attribute variation within a type often results in types not being clearly exclusive from one another, thereby creating a situation where the same sample can be classified somewhat differently by two researchers. Third, the association of attributes within a type increases the chance of researchers classifying the same sherd differently by giving different diagnostic weight to the various attributes making up the type. Fourth, the advent of new data continually demands the revision of the established types which are closed systems and are, therefore, incapable of supporting changes which modify their original definition. And fifth, the attempts to incorporate new data into the

established typology disrupts communication by creating a host of new types, revised types, and additions or deletions of certain attributes under an earlier type name or new designation.

An effective solution of the weaknesses inherent in type analysis is difficult to find. A central ceramic laboratory and periodic conferences for the revision of types may be ideally feasible, but such schemes call for an unrealistic degree of cooperation. In addition, the continual revision of types requires a constant reanalysis of previously reported materials in order to maintain the necessary body of comparative data. In view of the current problems facing Iroquois research the only solution that I can see is to discard type analysis in favor of attribute analysis.

ATTRIBUTE ANALYSIS

The strengths of attribute analysis are consistency or invariability, continuity, and accuracy. Consistency is essential for accurate communication and, therefore, accurate comparisons. Although it is still possible to misidentify certain attributes, such as linear stamping for incising, the chance of error is markedly reduced when dealing with a single attribute as opposed to the series of attributes, each possessing a range of expression, found in a type. Attribute analysis is more effective in maintaining the continuity of trends through time and space since the trends are not disrupted by a forced relationship with other attributes (type) which may reflect differing degrees of temporal and spatial significance. As the attribute is ideally the smallest definable feature, it should be the most accurate unit of analysis and, therefore, the most sensitive indicator of time and space relationships. The anticipated body of attribute data could eventually be categorized into general Pan-Iroquois attribute constellations or, possibly, Pan-Iroquois types to allow for simplicity of communication. Indeed, in a very real sense, doing type analysis prior to attribute analysis is putting the cart before the horse. Finally, the attribute is more amenable to data processing than the type and data processing will probably play an important role in the future of Iroquois archaeological analysis.

The weakness of attribute analysis lies in the number of possible attributes to be considered. Thus, a situation could arise where the forest could not be seen for the trees. And, as with the revising of types, a large portion of the published data must be reanalysed before it can be used effectively for comparative purposes.

The solution of the first weakness of attribute analysis must be selectivity. Those attributes which exhibit a high degree of time and space significance would be emphasized at the expense of attributes possessing a low degree of time and space significance. In respect to the reanalyses of the published data, a certain amount of comparative data could be extrapolated directly from the typologies. For the most effective application of attribute analysis, however, a reanalysis would be necessary.

The preceding discussion is not intended to negate the relative value of type analysis. Rim sherd typology has been the tool used to trace the general chronologies of the traditions involved in the Iroquois co-

tradition, and the value of this contribution cannot be underestimated. The purpose of this paper has been to point out the limitations of type analysis and the advantage of attribute analysis relative to the current problems of reconstructing Iroquois culture history. In my opinion type analysis has served its major function in Iroquois research and it is now necessary to use attribute analysis in order to demonstrate the continuity between the Middle Woodland period and the Late Woodland (Iroquois) period and to emphasize the continuities within and the relationships between the traditions of the Iroquois co-tradition.

ADDENDUM

There is nothing further that I can add to the philosophical aspects of attribute analysis versus typological analysis. Publications on Iroquois prehistory are available which incorporate both methods of analysis (White: 1961; Lenig : 1965; Pendergast: 1966: Wright : 1966). There is also available a non-Iroquois report (Wright: 1967) which relies entirely upon attribute analysis. The techniques used in this report are, in my opinion, directly applicable to Iroquois material. The most intensive application of attribute analysis to Iroquois materials, which also involves the analysis of previously reported sites, is currently in press (Wright and Anderson: n.d.).

Techniques of analysis are very relative matters but I am convinced that the current stage of Iroquois studies demands a significantly higher degree of sophistication than many other areas of investigation. Attribute analysis and, eventually, temporal and spatial attribute constellations, appears to be the most effective method of tracing the complex interplay within and between the evolving traditions of the Iroquois co-tradition.

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