CONTEMPORARY DEBATES IN ARCHAEOLOGY:
THE EXAMPLE OF CLASSIFICATION - PART I

(Em português p. 218)

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In the first part of this article I discuss the role and place of classification in the archaeological cognitive process. I refer mainly to the archaeological classification which was developed using the culture-historical approach. In the second part of the paper I describe the idea of modern classification, which has close links with interpretation and explanation in archaeology. This classification has been developed alongside American 'new archaeology' as a result of the debate on theory and practice in archaeology.

1. Introduction

Classification has been so far the key issue in archaeological disscusion, not exclusively in European archaeology. It is an example which, in a very distinct way, set off contemporary disputes on archaeology. Classification has been a subject of historical changes, which was manifested itself in different senses and mechanismes of changes. In spite of these transformations, classification establishes:

(1) the way of presentation research results,
(2) the way of definition of particular concepts,
(3) the way of expression archaeological hypotheses and theories.

In archaeological classification one can distinguish two their basic categories. Its differentation recalls Pike's (1954) emic/etic strategy applied to perception of culture. In classification, as well as in perception of culture, there is a preponderance either emic or etic perspective. Classifications connected with etic strategy are based on physical properties of analysed reality and produce physicalistic, "flat" picture of this reality, in spite of fact that they are supported by increasingly perfect formal methods. There is an obvious lack in them, however, the reference to internal coded structurization, "projected" with a culture system. However, consideration of this structurization is characteristic for emic strategy. The emic analysis concerns the subject-oriented dimension of reality along with socio-cultural norms and behaviours which are responsible for creation of a given sets of products.

Systemic conception of past reality requires catalyse of those two mentioned scopes of reality: "physicalistic" and subject-oriented. It means also that emic classification cannot be constructed without etic aspect. They both fulfil particular roles in perception of prehistory. Preference of one or another depends on research objectives. It should be strongly stressed that there is no classification of general objectivity. The aim of each classification it to resolve particular research problems and it is due to these problems there is a preponderance either emic or etic perspective within a given conceptualization.

Conceptualization in archaeology is responsible for understaning of classification, its objectives, roles, rules of proper undertaking, etc. In this aspect it is closely connected with perception of archaeological records.

Each classification has to meet some general requirements, such as the logical condition of adequacy and separation. Classifications applied in empirical sciences are based on criteria that must be empirically tested, hence they only approximately satisfy the above conditions. This is so because empirical judgements which constitute the grounds or principles of classification undergo changes or may even be rejected. Moreover, these classifications comprise the so-called "boundary" elements that incorporate features intermediate between two neighboring classes or sub-sets.

It needs to be clarified, however, that there is no classification serving a general goal – its form and character are always determined by the research problem it is designed to solve. The main practical problem associated with classification is the division of sets into sufficiently homogeneous sub-sets. In this respect, mono- and polythetic classifications prove to be valuable (Sokal & Sneath 1963; Clarke 1968). Especially the latter one, i. e. the polythetic classification, is seen as the best fitting the needs of archaeological practice (Clarke 1968, pp. 665-670;

Tabaczyñski & Pleszczyñska 1974:17). These classifications are founded on polythetic sets, that is, sets whose elements exhibit a sufficiently high number of featuress and each feature is shared by a sufficiently large number of elements. One can also distinguish monothetic sets that in terms of one feature consist of totally homogeneous elements, yet in practice such a situation rarely occurs, which is why the polythetic sets are more important (Tabaczyñski & Pleszczyñska, 1974: 17).

In archaeology, systematizations are also applied, by which I mean single-stage divisions arranged in accord with a relation introducing some order or partial order to a set. Yet, the fundamental role in archaeology is played by typology the concept of which was developed by O. Montelius (1903). Typology is attributed a certain character and goals, e. g.: a. systematization of sets of objects and phenomena falling within the range of a given science, b. description arranging the set of objects under investigation (for example, "x" precedes "y"), and c. specification and ordering of concepts from a given discipline of science. This is why the understanding of typology even on the grounds of one discipline of research is not univocal.

Typology simultaneously involves classification and ordering of a set, and therefore it includes both the classifying and ordering concepts (i. e. a system of ordering relations). The starting point for each typology is systematization or a few different systematizations, which leads to a multi-dimensional typology whose inaccuracy results from insufficient precision of the systematization conducted or from inaccurate identification of the bordering elements. This testifies to the fact that accurate systematization constituting the basis of each typology is of the highest importance.

The main concept in typology is "type," most frequently understood as a "pattern", i. e. products of culture, incorporating "features" typical of a given set. A set (group) is arranged in accordance with the similarity to the pattern. The basis for distinguishing a given type is constituted by features (not by objects) which assume specific values otherwise called categories or states of a particular feature (e. g. for the property "the shape of a vessel handle" the distinguished categories are "knee-shaped handle" or "band handle," etc.) The membership of a given category is gradable and can be measured by the intensity of features, that is, by means of a particular scale. Typological concepts permit formation of statements about objects that significantly differ in the degree of intensity of a given feature. They are used to order, and what is important – to explain the phenomena under investigation.

Prehistory formulates typological concepts on the basis of ordered empirical data, less frequently with reference to new theories. This is the reason why archeologists – when creating typologies – focus on their empirical foundations.

The properly understood typology, its importance being already emphasized, should be confronted with statistical methods. Application of typology leads to typological statements, while of statistics – to statistical statements (theses). Typological statements are stronger than the statistical ones. The former describe regularities or "typical," "standard" configurations, which implies that their correctness is a consequence of the fact that the described situation is "typical" or "standard", or of the absence of elements disturbing this "pattern." These statements apply also to situations of rare occurrence, thus they play such an important role in historical studies (Buksiñski 1982: 31).

In the humanities, typology corresponds to the so-called conception of indicators. When we deal with a typical situation, it may be classified as an indicator for the indicatum to occur (phenomenon, fact, regularity, property). The typological indicator is probabilistic, as on the basis of empirical studies a claim is made whether a particular form or cultural product is more or less typical. The typological indicator is gradable, which is its another asset. The goal of an archaeologist is to acknowledge deviations or modifications of a typical situation, if they occur. Then it implies a lesser probability of the occurrence of a typical inducatum (Buksiñski 1982: 31). Typological statements allow of countercases revealed in the process of substantiation of these cases, as an effect of modifications of their predecessors (Buksiñski 1982, p. 31). The following sentence can be accepted as a typological statement: "Concentration of pottery in a given section of a settlement, representing a similar style, is a manifestation of the fact that the place was occupied by one clan."

In archaeology it is important for the range of typological statements to include statements describing rules of behavior and statements about cultural norms (Buksiñski 1982: 32). Cultural norms are obligatory activities, referred to behaviors conforming to a certain pattern (Nowak 1970: 50; 1985). Indicators grounded on these norms have a probabilistic character, yet they differ from the typological indicators, as the occurrence of indicatum is not gradable, unlike that of the typological indicators. If social situations are more "typical," social behavior is in a better agreement with cultural norms, and therefore there is a greater probability that the indicators refer to standard behaviors and situations typical of them.

Typicality of behavior and of cultural situations is related to the thesis of the rationality of human actions. Rational actions depend on the type of situation and any statements about them have the form of guidelines that rational individuals should follow (Kmita 1973: 28; Topolski 1984: 139 ff; Dray 1957: 118-150; Buksiñski 1982: 33). Rational action is always instrumental, as it is taken in accord with a hierarchy of goals, norms of behavior, and the knowledge about a particular situation. Indicators refer to these three elements, and therefore they permit concluding about the actions, activities, knowledge and goals defining the future reality. This is why the role attributed to indicators, and in consequence to typology, is so important. Inference which is linked to the concept of indicators is a post-gnostic procedure (Topolski 1984: 272), most often applied in archaeology.

2. Classification as a measure of the directions of changes of conceptualization in archaeology

Classification constitutes a measure of the directions of changes of conceptualization in archaeology. A change of the theoretical option involves a change of the concept of archaeological source and as well as changes in the expectations with reference to the role, goals, tasks, and character of classification and the grounds for its legitimate application. It can be said that the model of archaeological source determines the model of archaeological classification.

In modern archaeology, conceptualization has been applied to problems that were not recognized by the "traditional" archaeology, namely "objectivity" of the archaeological knowledge, a scope of this knowledge relative to such sciences as anthropology, ethnology, history, and interrelations of cultural and social processes in prehistory. Yet primarily it included the concept of archaeological source and the issue of deposition and post-deposition processes. Finally, it was realized that the spatial configuration of material residue discovered by the archaeologist is not a direct reflection of the meaning of these objects in the past, and that an arrangement of the objects must have been subject to many transformations (cultural and natural) since the time they were deposited to the moment of the discovery by an archaeologist.

In the tradition of approaching archaeological sources L. Patrik (1985: 33) distinguished two basic models: "physical" and "textual." In the "physical" model the archaeological source (which is a historical source) is treated as a natural fossil which has to be located with respect to its generic, typological (e. g. species) features and in a proper time and space configuration, i. e. in a developmental process. The "textual" model, on the other hand, implies restoration of a humanistic character to archaeological sources by treating them as unique "texts" to be read. Hence, a source is viewed as a carrier of information – both that which seems obvious and the potential information that the archaeologist – depending on his or her scope of knowledge – discovers. This entails focusing on the features of the source that speak about the maker or user. These features should be considered on the level of group relations. To this effect, the archaeologist develops decoding and interpretation procedures.

L. Patrik does not view these models in opposition, but he emphasizes that they are related to a particular stage of a research procedure. Still, an observation can be made that archaeology following a cultural model (Klejn 1977: 2; 1980: 265), i. e. evolutionistic and diffusionistic, preferred the "physical" model of archaeological sources, which affected the character of classification.

On the other hand, the textual highlights the semiotic character of sources, where objects are "words" of a text, signs functioning as words in a language. Consequently, interpretation consists in imposing a meaning so as to construct a picture of the past. Consistent with this model is a view that a

product is an iconologization of a thought and thus what the archaeologist examines is a prehistoric thought (cognitive archaeology).

A remark should be made here that the textual model does not take into account a crucial aspect of archeological source, namely that it is both a symptom and sign, and not just a sign. It is an element of the past reality which has been preserved till the present, and thus it is a symptom. On the other hand, however, it has a content which must be read through narrativization of the source and in this sense it is a sign, or a quasi-sign. This duality hinders an adequate apprehension and classification of sources, for – in most cases – the double link with prehistoric reality, as symptom and sign, should be accounted for. A source is a more or less conscious effect of human action, i. e. "reflection" of the tradition of a given culture, norms, and principles defining its identity. In this sense, an archaeological source is at the same time an element of reality (symptom) and it carries information about it (sign). One cannot, however, immediately say what information is contained in a given source. To this effect, it is necessary to interpret it, or "get it out," or (as it was described by J. Topolski (1984; 1992) – to make a narrative. The narrative can range from a very simple to a very complex.

It cannot be claimed that in the paleontological approach to a source any kind of narrativity is excluded, yet it is simple, apparent. This model assumes that the source has already had "prepared" answers to the problem of form, technique, time and place of origin as well as function. Thus, classifications derived from the paleontological approach to a source are different than those based on the textual model (at least in part).

The paleontological model of a source shaped the evolutionistic and diffusionistic classifications in Europe and North America. The goals of classifications in cultural archaeology were affected by the research on Paleolith, mainly in France, the goals being explanation and comprehension of paleolithic phenomena linked to long duration and hunters and gatherers. A possibility of achieving the goals was provided by the theory of evolutionism which, in turn, was justified by the effects of typology indicating the continuity of transformations of production of stone tools. Classifications and typologies of "artifacts" revealed a steady technological progress identified with the progressive character of evolution (G. de Mortillet 1982). They strengthened evolutionary thinking in archaeology. The focus was put on classifications illustrating diachronic transitions of phenomena, from the "lower" to "higher" forms in terms of evolution. The criteria of division were similarity (identified, as in biology, with kinship) and the level of organization. This marked a significant progress in rationalization of the very procedure of classification and typologization.

Diffusionism extended the field of research with the spatial dimension of cultural phenomena and diffusion processes in transformations of cultures. Since then the relations of culture and space constituted the grounds for determining the identity of culture. Spatial analysis frequently involved such units as "cultural nucleus," "cultural range," "ethnic environment," "cultural circle," or the "theory" of a cultural area. The most important achievement was the development of the principles of typological method which allowed to introduce cultural divisions and define the term "archaeological culture."

Development by O. Montelius (1903) of the principles of typological method was a turning point in the field of classification in archaeology. The method evolved under the influence and in accordance with the fundamental assumptions of evolutionism and diffusionism. The main advantage of this method was that it linked and identified typological changes of products with chronological changes. Its basis was an assumption that a "closed find," a term introduced by O. Montelius (Ger. *geschlossener Fund* or, literally, closed find) represents inventory from the moment of its deposition, for example, a grave or a treasure sensu stricto. In this term, Montelius did not differentiate between the moment of production and the moment of deposition, which is a crucial factor of analysis. According to Montelius, "closed find" was a set of objects which, being man-made, was subject to specific laws of development. The unit of such analysis is a type distinguished on the grounds of the similarity of forms of the products. Each type had to be a typological indicator. The typology constructed by O. Montelius was three-dimensional and the condition it had to meet to be considered

correct was the consistency of results on all the three levels.

The first dimension comprised a typological order of a certain type (e. g. type A), or a spatio-temporal series of the type A from its origin to disappearance. The second dimension whose basis were series of the type, involved construction of a series of types, that is, searching for and arranging elements synchronic with respect to each other, or series of synchronic types. The third stage implied compilation of the results from both dimensions so as to finally arrange all the archeological records. The basis for differentiating types were the so-called leading forms, constantly found in the "close finds," that were important from the point of view of chronology. The typological method consisted in constructing a certain scheme of evolutional changes (from simpler to more complex forms) that was empirically verified on the basis of stratigraphy and microregional analysis. O. Montelius' method played a fundamental role in ordering archaeological materials, yet its effect was monolinear typologism. It did not take into account the structure of fossils which are not simple assemblages, but the remains of social and cultural structures. Another limitation of the typological method is that it is applicable only to assemblages (of finds) that had been subject to homogeneous technological procedures. This was proved by varied statistical analyses performed by the so-called Stuttgart group. In other words, the Montelius' method could be applied only to assemblages featuring normal distribution which yields the Gauss curve. In the case of metal tools which reveal a tendency for reutilization, repair, etc. it cannot be used, as it leads to erroneous results.

Polish archaeology from the beginning accepted the principles of the typological method, arranging sources into periods and phases and acknowledging transformations of culture in space and time as well as further developed this method (e. g. Kostrzewski 1914, 1923; L. Kozlowski 1922, 1923, 1925; Krukowski 1920, 1922, and the first synthesis of the prehistory of Poland by W. Antoniewicz *Archeologia Polski* [Archaeology of Poland] from 1928).

3. Cultural and historical classification

Archaeological classification in compliance with the assumptions of American diffusionism was developed by I. Rouse, A. Krieger, and J. Ford. The fundamental principle of this classification was an assumption of the relation between classification and typology on the one hand and chronology on the other. This relation determined the truth value of general and local types.

I. Rouse (1939: 9-14), when developing the principles of modern classification, began with a definition of such fundamental concepts as "type" and "mode," which affected the precision and character of classification.

He claimed that "type" was a theoretical concept which specified the conditions for affiliation to a particular unit, or to a class identified by the researcher. These conditions were described by particular "modes" or classes of "modes." Both the type and mode were concepts developed in order to build a specific scale used to describe the variability of archaeological assemblages. These units are tools measuring temporal variability, not real entities. By definition, modes are a constant standard, hence they can neither develop not expand (Rouse 1939: 14). A type, on the other hand, has a "historic," "chronological" character, for in order to distinguish it, it is necessary to take into account these modes which are considered stylistically and chronologically important (Ford 1936; Rouse 1939: 18, 157). Modes of products are to reveal cultural standards or cultural behaviors, in particular the behaviors of the manufacturer that the mode conformed to, and which he or she passed through his or her society to the subsequent generation (Rouse 1939: 13). Thus, on the one hand, the mode is comprehended as a representation of different aspects of variability (technological, functional, stylistic), and, on the other, as a standard or custom governing the behavior of the manufacturer (Rouse 1960). Defining "mode," Rouse refers to objective (technology, etc.) and subjective (manufacturer subordinated to a certain standard cultural behavior) concepts. This raises some doubts, however, as far as the comparability and applicability of one and the same concept in two dimensions (objective and subjective).

The ideas of I. Rouse were completed by A. Krieger (1944) who attempted a criticism of taxonomy in archaeology, based on the affinity of products, on the hierarchy of elements, and on the application of universal criteria. Krieger provided Rouse's ideas with a practical aspect. He defined

types as sets of observable, and at the same time, standard features or "modes" concerning technology, texture, hardness, etc. (Krieger 1944: 227). The major achievement of Krieger is the development of the so-called test of historical significance which permits establishing the significance of types. The prerequisite for establishing a type is a temporal and spatial relation of types. "Type" is a construction which is subject to an empirical test in the temporal and spatial scale, and only when the test (measurement, observation) proves that it measures "proper" quantities, it becomes the unit of measurement in archaeology, i. e., a type. In Krieger' work, particularly apparent is the relation between "form" and "time" (chronology).

A role different from that of Rouse and Krieger was played by J. Ford (1938; 1949). His ideas had mainly a practical value. He focused on reflection and seriation of archaeological material collected on the vast areas of South America and Peru (Ford 1949). According to him, a type of product is an analytical tool which constitutes a chronological (historical) indicator and thus allows for description of sets in terms of chronological order (seriation). Still, in Ford's works we can trace the same difficulties in concept formation as in Rouse's and Krieger's works. He also applied the test of historical significance which at a limited social context did not grasp local stylistic changes.

Summing up: all these concepts assumed the existence of real limits in the source, empirical material which, however, are not always detectable or marked because of the continuity of culture. It is possible to indicate these limits by imposing on that material a "network," which is artificial yet has clearly marked boundaries; such a network is constituted by types. Within such an approach, a type is conditional, therefore it is subject to changes, coming closer and closer to reality. According to A. Brew (1946: 76-7): "Nobody `discovers' culture nor `unveils' types .... There is nothing like a type that an object has to match. Such concepts treated types as a measure of cultural variability in time and within a given space. Thus identification of a type seemed justified only when it was a measure of such variability. Classifications did not have a hierarchical order.

The hierarchy of classification was introduced under the name "type-variation" (Wheat et al. 1958). It served to measure variability on a local scale, and as such was a supplement to the "test of hierarchical significance" of A. Krieger. "Variation was a unit of a local order. This type of classification dominated in the analysis of pottery where also universal criteria of shape were taken into account (cf. lit: Minta-Tworzowska 1994).

A critique of such a way of classification was undertaken mainly by J. N. Hill and R. K. Evans (1972) who questioned the issue of applicability, especially when one of the criteria of acknowledging temporal and spatial coherence was stratigraphy (Broyles 1966).

Chronological and typological findings were coupled with sociological reconstructions, which resulted in the understanding of types that – by definition – served for measuring purposes, as really existing entities. Types led directly to "behaviors" and "customs" (rules) of a particular culture. This gave rise to a very convenient interpretation principle. Quantitative changes revealed in classifications were translated into the language of qualitative changes. It was not realized then that transformations taking place in time are always a transition, sometimes an expansion, but certainly cannot be treated as progress (Piekarczyk 1972: 14-17, 329-332).

The change of a "cultural" model of classification took place in the 50s, in parallel with the change of goals in archaeology. The research problematic narrowed to chronological issues and genetic descriptions of products (Hayden 1984: 81) was replaced by processual reconstructions, mainly in American archaeology. The first to collapse were the European classifications (Childe 1935). An example of the clash of different tendencies are European classifications, in particular of Paleolithic, based on the lists of types. An important example of the above was a proposition of a list of types and a description of the technology of processing stone and flint articles for the Upper and Middle Paleolithic put forward by F. Bordes (1950). This proposition was then extended over the Upper Paleolithic articles by D. de Sonneville-Bordes and J. Perrot (1953). The principle of classification was acceptance of uniform criteria and application of intersubjective indicators of contribution of

particular features. The form of a diagram as the effect of classification was determined by the order and number of elements and it did not allow for a comparison of too many sites. That is why in the journal *Paleohistory* a slightly different proposition, developed mainly by A. Bohmers, for the analysis of flints was presented. This proposition was also applied to examine Neolithic pottery. This method was based on a percentage contribution of particular types of tools, thus permitting comparison of many sets and sites. It was considered to supplement and overcome the flaws of the method of F. Bordes, commonly accepted in European archaeology (also J. K. Kozlowski 1965).

F. Bordes' method played an essential role in the development of studies on flint industry in the fifties and sixties (Lech 1988: 282). Of its major drawbacks the most important were the testing mistakes, errors resulting from the application of percentage measures, errors resulting from an arbitrary (not natural) ordering of types, typological errors, errors of perspective – different approach to the same data, not always fully justified (Kerrich & Clarke 1976; Hodson 1977). The weakness that is most often stressed, however, are its negative effects on the interpretation of the Stone Age, as the affinity of products was identified with kinship, which made grounds for the differentiation of cultural assemblages and cultures. Moreover, all lists of types "freeze" the individuality of products and the formal categories do not always correspond to real properties of products (Schild 1975).

Only in the beginning of the 70s two trends in classifications began to dominate: modern, initiated by the works of L. R. Binford, and traditional. Therefore, the change in the strategy of classification was dictated by processual archaeology.

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