

## A FURTHER CRITICISM OF THE TYPE-VARIETY SYSTEM: THE DATA CAN'T BE USED

Michael E. Smith

*The type-variety system of ceramic classification has been criticized on a number of theoretical points concerning typology in general; yet it remains very popular among archaeologists. This paper adds a methodological criticism to the debate: ceramic data presented according to the highest standards of type-variety analysis simply cannot be used for independent reanalysis. An attempt to reanalyze some data presented according to the type-variety system (Formative period ceramics from the site of Barton Ramie, Belize) is described, and shortcomings of type-variety data presentation are pointed out. These findings are in direct opposition to claims made by type-variety practitioners as to the adequacy of their format of ceramic description and illustration.*

In spite of serious criticism of the scheme on a number of theoretical and methodological points (e.g., Dunnell 1971; Hill and Evans 1972; Lathrap 1972), many archaeologists working in the Maya area continue to employ the type-variety system for their ceramic analyses. One of the points often made in defense of the type-variety system is that the data presented according to the general scheme can be used by others for further analysis (e.g., Gifford 1976:4; Sabloff 1975:6). In a recent attempt to reanalyze the Formative period ceramics from the site of Barton Ramie, Belize, it was found that the method of data presentation used in the ceramic report (Gifford 1976) effectively blocked independent reanalysis. Since the presentation of data is closely linked to the particulars of type-variety analysis, discussion of the matter may be of interest to Mesoamericanists or ceramicists in general.

Type-variety systematics (Wheat et al. 1958; Gifford 1960) was introduced from the Southwest into Maya archaeology by Smith et al. (1960). James C. Gifford led the way with his analysis of the Barton Ramie ceramics (1963, 1976; Willey et al. 1965:310-390). He and Robert E. Smith (Smith and Gifford 1966) went back to Smith's (1955) pioneering Uaxactun ceramic sequence and assigned type and variety names to the illustrated materials. In the past decade and a half, many Mayanists have followed their lead and adopted the type-variety system for their ceramic analyses (e.g., Adams 1971; Ball 1977a; Culbert 1965; Matheny 1970; Parsons 1967/1969; Sabloff 1970, 1975; Sabloff and Smith 1969; Sharer 1978; Sharer and Gifford 1970; Smith 1971; see also Willey et al. 1967).

In 1971 Dunnell published a critique of one variant of the type-variety system (Dunnell 1971; see Sabloff and Smith 1969) in which he pointed out that type-variety classification is generally carried out without stating "any specific problems for which the classification proposed is intended to serve" (Dunnell 1971:115) and that practitioners of type-variety analysis "assume, or at least imply, lacking any specific problem, that the scheme is the one for all problems in the area concerned, forcing them into the untenable position of stating that they consider *all* attributes of their collections" (1971:115, emphases in original).

Problems with this kind of "single-best-typology" notion have been pointed out in the literature since 1946 at least (Brew 1946:44ff.); Hill and Evans (1972) is a useful recent formulation. However, these theoretical objections seem to have gone unacknowledged (at least in print) by the archaeologists employing type-variety systematics. The rationale for continued use of the type-variety system in Maya archaeology appears to have two components: first, that "it is necessary to make *quick and easy* comparisons of pottery from a number of sites" (Sabloff 1975:1, emphasis added); second, that the method of data presentation dictated by a type-variety analysis is "sufficiently flexible to accommodate any foreseeable circumstances in future situations" (Gifford 1976:4; see also Sabloff 1975:6). Gifford stated that he hoped his type-variety analysis of the Barton Ramie ceramics would be "as useful to others as it was to us" (1976:4). In my recent attempt to use Gifford's data, his hopes were not borne out.

The ceramic attributes used to define types and varieties generally concern certain limited aspects of paste and surface treatment. Vessel form is ignored as a defining attribute (although type and variety descriptions usually mention the range of variation of vessel form within the class). One of the goals of the reanalysis of the Formative Barton Ramie ceramics was to examine the temporal variation of the attributes of vessel form as well as the attributes of paste and surface treatment in order to compare results with Gifford's (1976) chronology. The technique of "qualitative seriation" (Lathrap 1962:246ff.), also called "seriation by continuity of features" (Rowe 1961), was chosen for the analysis. This technique is nontypological and nonquantitative: the unit of analysis is the individual ceramic attribute (or "feature" in Rowe's terminology) rather than the type. A number of successful applications of this technique can be found in the literature on South American ceramics (e.g., Lathrap 1962:246ff.; Isbell 1977; Menzel et al. 1964; Menzel 1964, 1976; see also Rowe 1961). The use of qualitative seriation on the Barton Ramie ceramics was intended as a methodological exercise: its assumptions and procedures are quite different from the type-variety method employed by Gifford, and it was thought that a comparison of results would be of methodological interest and might also add to our understanding of the ceramic history of the Belize Valley.

The Barton Ramie ceramics appeared to be ideal for this sort of independent analysis. The excavation report (Willey et al. 1965) is a model of data reporting: at least one profile drawing is provided for each excavation unit; the metric excavation levels are drawn superimposed on the physical stratigraphy; all such metric levels are provided with a provenience number on the illustration; and each of the 65 excavations is discussed in turn. There was one drawback: the use of arbitrary metric excavation levels, often on the sloping sides of mounds (Willey et al. 1965:156), produced a situation in which only 40% of the total provenience units contained material from a single physical stratum; the remaining 60% crosscut the stratigraphy and thus contained a mixture of materials from two or more physical strata. Gifford provides illustrations of more than 2,000 sherds in his (1976) ceramic report. An appendix gives the provenience unit and rim diameters for most of the illustrated sherds. Thus all the illustrations could be traced to their stratigraphic location in the profile drawings, and all (illustrated) sherds from a given provenience unit could be located in the report. This sort of documentation and cross-referencing potential is necessary for any sort of intensive reanalysis by the reader; not many excavation and ceramic reports equal the Barton Ramie publications in this respect.

In spite of the high quality of data presentation in the Barton Ramie excavation report and the comparability with the ceramic illustrations, the nature of Gifford's type-variety classification and the manner in which the ceramic data are presented effectively block any analysis concerned with attributes *other than* the few used as definitional criteria for the types and varieties. As Norman Hammond (1972) has pointed out, the type-variety system is monothetic in nature. (Doran and Hodson [1975:160] define *monothetic classes* as "classes that have been defined because their members possess given characteristics," while *polythetic classes* are "classes that have been defined because their members are similar.") The problem with Gifford's presentation of the ceramic data derives from the fact that most attributes, excluding those defining the types or varieties, vary *within* the monothetic classes. However, descriptions and illustrations are presented only according to types and varieties; no further breakdowns are provided. Thus for a given illustrated sherd or vessel, attributes such as temper, paste, and many aspects of surface treatment or decoration cannot be ascertained unless those attributes happen to be among the few (usually two or three) defining characteristics of the variety. An example should make this clear.

Consider the class "*Jocote Orange-brown* [type]: *Jocote variety*" from Barton Ramie. (This class is included in the "*Jocote ceramic group*," "*Uaxactun unslipped ware*," and the "*Jenney Creek ceramic complex*." See Gifford 1976:63.) This is a monothetic class in that all members exhibit "well-smoothed, unslipped dull orange to brown exterior surfaces on both jar and bowl forms" (Gifford 1976:63). In addition, the implicit criteria of relatively fine paste and thin walls are part of the class definition, because other varieties of the *Jocote Orange-brown* type exhibit thicker walls and coarse paste as their defining criteria (1976:67). When the description of this variety is

read, it is learned that many of the attributes of interest to the ceramic analyst (see, for example, Shepard 1956) vary within the class. For example, we are told that "most vessels appear to have had modelled or appliqué fillet on the exterior wall"; "oxidation is variable with some pastes having thick dark cores, while others are uniform in color"; "exterior surfaces are usually well-smoothed and may be semipolished" (Gifford 1976:63, emphases added). Other variable attributes within Jocote Orange-brown: Jocote variety include temper, color range, vessel form, wall thickness, rim diameter, and the existence of handles, spouts, and other appendages (1976:63). Fifty sherds and vessels of this ceramic class are illustrated in figures 15 through 19 of the report. Which of these 50 exhibit which of the above attributes? Which are semipolished and which not as well smoothed? Which are orange, and which are brown? The reader has no way of knowing. Some attributes can be discerned from the illustration: rim form at least, vessel form in some cases, and certain decorative attributes on some of the illustrations. But by and large most attributes that ceramic analysts find interesting and useful cannot be determined for the individual illustrations. They cannot therefore be traced to the excavation profile drawings; they cannot be used in further analysis. This problem was recently pointed out in reference to Sabloff's (1975) type-variety analysis of Seibal ceramics (Harlan 1976:376f.).

It should perhaps be mentioned that this problem of data presentation was not discussed in either Ball's (1977b) or Adams' (1977) generally favorable reviews of Gifford's (1976) ceramic volume. There may be some question, however, about Ball's qualifications as an independent and nonpartisan reviewer. His name is listed on the cover of the report as having provided "special sections or assistance" (Gifford 1976:cover). As Carol Gifford pointed out in her acknowledgments:

Joseph W. Ball carefully studied the manuscript and illustrations and provided form designations for the type descriptions; I value highly his participation in the preparation of this volume (1976:xi).

Ball also wrote Chapter 4 of the report (1976:323-330; cf. Adams 1977:970). Given his involvement in the preparation of the book, one wonders whether some other reviewer might not have been more appropriate.

The attempted reanalysis of the Formative Barton Ramie ceramics was blocked by this problem of data presentation. Rim form and, to a limited extent, vessel form are discernible in Gifford's illustrations. Their stratigraphic distributions in the excavations proved inconclusive, however, and the other attributes could not be added to the analysis for the reasons given above. The implications of this failure go beyond a single unsuccessful reanalysis of Barton Ramie ceramics. This basic problem pertains to all the other Maya type-variety ceramic reports (the latest is Sharer's 1978 volume on Chalchuapa), and anyone desiring to work with Maya ceramics as published in these reports faces the same difficulty. Unless one accepts wholeheartedly that the typologies as originally defined are the single best classification for all purposes—a dubious position, given the criticisms of Brew (1946:44ff.), Dunnell (1971), and Hill and Evans (1972) briefly mentioned above—the only recourse for further study is the sherds themselves. This is an impractical solution and certainly not a desired state of affairs.

What possible solutions are there to this problem? One could follow the critics of type-variety systematics and insist on more diverse and flexible ceramic analysis ("We need more rather than fewer classifications, different classifications, always new classifications, to meet new needs" [Brew 1946:65]). Few attempts have been made to use modal analysis (Rouse 1939; Lathrap 1962; Raymond et al. 1975; Isbell 1977) in the Maya area. As Dunnell (1971:115) pointed out, Sabloff and Smith's (1969) use of the term *mode* was incorrect; they were dealing with *attributes* and calling them *modes* (see Rouse 1939 or 1960 on this distinction). Sharer's chapter on "modal analysis" (1978:92-101) is a mere tabulation and not a true analysis of modes. However, this is an issue too complex to be dealt with in this paper. Strictly on the level of standards of archaeological data presentation, perhaps a table could be provided in the ceramic report listing the major attributes of all illustrated sherds and vessels. Of course it would be impossible to give an exhaustive listing of *all* attributes (see, for example, Hill and Evans 1972:250f.), but those attributes most commonly

used by archaeologists in their ceramic studies could be tabulated for the illustrations. This may add some pages to ceramic reports and may not be as "quick and easy" as the present procedures, but it would at least allow those of us not convinced of the overall usefulness of type-variety classification for all possible purposes to reanalyze the data for further use.

*Acknowledgments.* I would like to thank Nedenia C. Kennedy, Donald W. Lathrap, and Gary A. Apfelstadt for helpful discussions on the type-variety system and on ceramic classification and analysis in general.

## REFERENCES CITED

- Adams, Richard E. W.  
 1971 The ceramics of Altar de Sacrificios. *Peabody Museum, Harvard University, Papers* 63(1).  
 1977 Review of "Prehistoric pottery analysis and the ceramics of Barton Ramie in the Belize Valley" by James C. Gifford. *American Anthropologist* 79:969-970.
- Ball, Joseph W.  
 1977a The archaeological ceramics of Becan, Campeche, Mexico. *Middle American Research Institute, Publication* 43.  
 1977b Review of "Prehistoric pottery analysis and the ceramics of Barton Ramie in the Belize Valley" by James C. Gifford. *American Antiquity* 42:661-664.
- Brew, James Otis  
 1946 The archaeology of Alkali Ridge, southern Utah. *Peabody Museum, Harvard University, Papers* 21.
- Culbert, T. Patrick  
 1965 The ceramic history of the central highlands of Chiapas, Mexico. *New World Archaeological Foundation, Papers* 19.
- Doran, J. E., and F. R. Hodson  
 1975 *Mathematics and computers in archaeology*. Harvard University Press, Cambridge.
- Dunnell, Robert C.  
 1971 Sabloff and Smith's "The importance of both analytic and taxonomic classification in the type-variety system." *American Antiquity* 36:115-118.
- Gifford, James C.  
 1960 The type-variety method of ceramic classification as an indicator of cultural phenomena. *American Antiquity* 25:341-347.  
 1963 *A conceptual approach to the analysis of prehistoric pottery*. Ph.D. dissertation, Harvard University, Department of Anthropology.  
 1976 Prehistoric pottery analysis and the ceramics of Barton Ramie in the Belize Valley. *Peabody Museum, Harvard University, Memoirs* 18.
- Hammond, Norman  
 1972 A minor criticism of the type-variety system of ceramic analysis. *American Antiquity* 37:450-452.
- Harlan, Mark E.  
 1976 Research orientation and data presentation in Maya archaeology. *Reviews in Anthropology* 3(4):371-378.
- Hill, James, and R. K. Evans  
 1972 A model for classification and typology. In *Models in archaeology*, edited by David L. Clarke, pp. 231-273. Methuen, London.
- Isbell, William H.  
 1977 *The rural foundation for urbanism: economic and stylistic interaction between rural and urban communities in eighth-century Peru*. University of Illinois Press, Urbana.
- Lathrap, Donald W.  
 1962 *Yarinacocha: stratigraphic excavations in the Peruvian montaña*. Ph.D. dissertation, Harvard University, Department of Anthropology.  
 1972 Review of "Archäologische interpretation und ethnographischer befund: eine analyse anhand rezenter keramik de westlichen amazonasbeckens (1 and 2)" by Rüdiger Vossen. *American Anthropologist* 74:964-966.
- Matheny, Ray T.  
 1970 The ceramics of Aguacatal, Campeche, Mexico. *New World Archaeological Foundation, Papers* 27.
- Menzel, Dorothy  
 1964 Style and time in the Middle horizon. *Ñawpa Pacha* 2:1-106.  
 1976 *Pottery style and society in ancient Peru: art as a mirror of history in the Ica Valley, 1350-1570*. University of California Press, Berkeley.
- Menzel, Dorothy, John H. Rowe, and Lawrence E. Dawson  
 1964 The Paracas pottery of Ica: a study in style and time. *University of California Publications in American Archaeology and Ethnology* 50.
- Parsons, Lee A.  
 1967/1969 Bilbao, Guatemala: an archaeological study of the Pacific coast Cotzumalhuapa region. *Milwaukee Public Museum, Publications in Anthropology* 11 and 12.

- Raymond, J. Scott, Warren R. DeBoer, and Peter G. Roe  
1975 Cumancaya: a Peruvian ceramic tradition. *University of Calgary, Department of Archaeology, Occasional Papers* 2.
- Rouse, Irving  
1939 Prehistory of Haiti: a study of method. *Yale University Publications in Anthropology* 21.  
1960 The classification of artifacts in archaeology. *American Antiquity* 25:313-323.
- Rowe, John H.  
1961 Stratigraphy and seriation. *American Antiquity* 26:324-330.
- Sabloff, Jeremy A.  
1970 Type descriptions of the fine paste ceramics of the Bayal Boca complex, Seibel, Peten, Guatemala. In *Monographs and papers in Maya archaeology*, edited by William R. Bullard, Jr., pp. 375-404. *Peabody Museum, Harvard University, Papers* 61.  
1975 Excavations at Seibal, Department of the Peten, Guatemala: the ceramics. *Peabody Museum, Harvard University, Memoirs* 13(2).
- Sabloff, Jeremy A., and Robert E. Smith  
1969 The importance of both analytic and taxonomic classification in the type-variety system. *American Antiquity* 34:278-286.
- Sharer, Robert J.  
1978 *The prehistory of Chalchuapa, El Salvador, Vol. 3 (pottery and conclusions)*. University of Pennsylvania Press, Philadelphia.
- Sharer, Robert J., and James C. Gifford  
1970 Preclassic ceramics from Chalchuapa, El Salvador, and their relationships with the Maya lowlands. *American Antiquity* 35:441-462.
- Shepard, Anna O.  
1956 Ceramics for the archaeologist. *Carnegie Institute of Washington, Publication* 609.
- Smith, Robert E.  
1955 Ceramic sequence at Uaxactun, Guatemala (2 vols). *Middle American Research Institute, Publication* 20.  
1971 The pottery of Mayapan (2 vols). *Peabody Museum, Harvard University, Papers* 66.
- Smith, Robert E., and James C. Gifford  
1966 Maya ceramic varieties, types and wares at Uaxactun: supplement to "ceramic sequence at Uaxactun, Guatemala." *Middle American Research Institute, Publication* 28:125-174.
- Smith, Robert E., Gordon R. Willey, and James C. Gifford  
1960 The type-variety concept as a basis for the analysis of Maya pottery. *American Antiquity* 30:330-340.
- Wheat, Joe Ben, James C. Gifford, and W. W. Wasley  
1958 Ceramic variety, type cluster, and ceramic system in southwestern pottery analysis. *American Antiquity* 24:34-47.
- Willey, Gordon R., William R. Bullard, Jr., John B. Glass, and James C. Gifford  
1965 Prehistoric Maya settlements in the Belize Valley. *Peabody Museum, Harvard University, Papers* 54.
- Willey, Gordon R., T. Patrick Culbert, and Richard E. W. Adams  
1967 Maya lowland ceramics: a report from the 1965 Guatemala City conference. *American Antiquity* 32:289-315.

## OF TYPES AND VARIETIES IN BOOK REVIEWS: A REJOINER TO MICHAEL E. SMITH

Christopher S. Peebles

*A reply to Smith.*

Although I am neither an expert on the archaeology of the Maya area nor a proponent of the "type-variety" method of ceramic analysis, as "Reviews" editor of *American Antiquity*, I was