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Ceramic Ethno-techniculture

The use of ethnographic analogy in the interpretation of excavated material culture in Palestine has been limited and random, whether consciously or unconsciously in the mind of the archaeologist. Until there is a critical evaluation of ethno-archaeology as a technique for reconstructing past behaviour patterns, casual use of analogy is dangerous (Freeman, 1968: 262), though some see only a methodological difference between ethnology and archaeology (Chang, 1967: 233 f). One of the aims of this paper is to begin to provide a conceptual framework for ethno-archaeology in Palestine and to report on our recent attempts to correlate ceramic ethnography, that is, a study of traditional potters at work in the West Bank and Gaza, with our efforts to publish ceramic evidence in such a way that it effectively reflects and interprets the evidence for a history of ceramic techniculture in Palestine. This is admittedly a small step out of the camp of traditional Middle Eastern archaeology. When, however, we deal with the theoretical aspects of ethno-archaeology it will be evident that further steps remain. Before we enter that discussion it may be useful to examine briefly the progress of ethno-archaeology in Palestine.

The original aims of the Palestine Exploration Fund in 1865 included the following statement of purpose:

> . . . describe in a systematic and exhaustive order with clear and exact minuteness the manners, habits, rites, and languages of the present inhabitants . . . Many of the ancient and peculiar customs of Palestine are fast vanishing before the increasing tide of Western manners, and in a short time the exact meaning of many things . . . will have perished. (Besant, 1895: 23)

The report of *The Survey of Western Palestine*, published in 1881, included in Section C at the end of the catalogue for each sheet, only the names of tribes in each area but no further ethnographic information. Conder's personal narrative of the Survey records in three chapters general ethnographic notes about fellahin and bedawin, but very little attention is given to material culture beyond general comments about village houses (Conder, 1879, II: 209–92). The Fund unfortunately exhausted its resources on the topographic and archaeological survey and did not have the energy to pursue its ethnographic objectives with the same skill. The desire to do for Palestine what E. W. Lane's *An Account of the Manners and Customs of the Modern Egyptians* (1835, first edition) did for Egypt was never fulfilled.

Indeed, excavators have never systematically and rarely consciously or seriously employed ethnographic analogy to interpret the archaeological record, though most students of the Ancient Near East have assumed a strong continuity between past and present life in the land. An instructive exception is the work of R. A. S. Macalister. That his publication (1912) of his excavation of Gezer (1902–9) is organized with the aim of systematically reconstructing the form of life in ancient Gezer is evident from the titles and sequence of the major sections in his report, viz., Peoples, Dwellings, Burials, Daily Life, Warfare and Religion. When he attempts to interpret the plans of ancient houses, Macalister finds a 'source of illumination' in 'the dwellings of the modern fellahin which seem to reproduce, with tolerable exactness, the main peculiarities of their ancient predecessors'. After a brief description of a typical house in Abu Shusheh he continues, 'If we now apply this modern analogy to the plans of houses that remain . . . we shall have little difficulty in getting an idea of the description of the normal Gezerite house' (Macalister, 1912, I: 167). In general Macalister seeks to interpret the archaeological record within a socio-economic context, filling in the gaps 'by reference to contemporary monuments . . . or by comparison with modern customs, which so often offer valuable illustration of ancient practises' (Macalister, 1912, I: viii). Pottery is presented as the work of potters with due attention given to technical process and ware. He does not, however, seek out a traditional potter to observe his technique or source of materials. He himself was aware that to do so would 'swell the book unduly' (I: viii).

Missionaries, pilgrims and Bible students produced extensive reports on the land including customs and living conditions of the inhabitants, largely to illustrate the biblical narrative. Gustav Dalman's *Arbeit und Sitte in Palästina*, in

seven volumes (Dalman, 1928–42) is the richest collection of ethnographic material useful to students of material culture tradition in Palestine. But, for a variety of reasons we cannot examine here, archaeologists rarely resorted to overt use of ethnographic parallels to interpret the archaeological record. To be sure, there are scattered references in excavation reports to local tradition as grounds for various interpretations of uncovered architecture and artifacts. (e.g., Bliss, 1898: 95; Bliss and Macalister, 1902: 187; Franken, 1975: 146f; Grant, 1931: 72f; Kyle, 1934: 68; McCown, 1947: 250f; Smith, 1973: 243; Tufnell, 1958: 292). Entirely lacking is the systematic approach of Macalister. His perception of the archaeological task was not comprehended. In the post-World War I period the major effort of scholars was biblical-historical and therefore chronology was often at the centre. Archaeology was not being interpreted by a conscious use of ethnographic analogy.

The clearest evidence of this state of affairs is that only two persons have ever published descriptions of traditional potters in Palestine. These brief studies were limited to the handwork of women potters in Ramallah, Kafr al Labad and Ya'bad. Of Gaza, Hebron and pre-1948 Ramleh, all known to be pottery production centres, there is no report. A brief account of what has been published is therefore in order. The first study deals with Ramallah potters and was written by Mrs Lydia Einsler, daughter of Conrad Schick, who for almost 40 years reported to the Palestine Exploration Fund on numerous archaeological discoveries in Jerusalem. Mrs Einsler's interest is entirely ethnographic. Hers is the earliest and only detailed account we have. In May and June each year the women potters of Ramallah collected clay and fuel which they used in July and August while the men were at the threshing floor. Good clay was found at nearby al-Bira and Kafr 'Aqab. Bad clay resulted in many wasters and a weakness of fired vessels generally. Non-plastic material was grog, sherds found on ancient sites, pulverized when added to the clay. Fuel was cow and sheep dung gathered sometimes with great effort at a distance from Ramallah. Preparation of the clay required about one week. The mixture was two-thirds *khamra* and one-third *trabe*. The paste was properly prepared when it could be formed into a coil which would not break on suspension. For five kinds of coarser forms straw was mixed into the clay: an oven (*ṭabun*), a chicken house (*qunn*), small bowl (*qu'od*), cooking stove (*ṭabbakh*), and a grain bin (*khabiyeh*). As an example of construction techniques Mrs Einsler describes in some detail the forming of a *zir* or *hishshiyeh*, a large water or oil jar. On a damaged straw mat ca 45 cm. in diameter a thin layer of ash is spread. Two handfuls of clay mixed with straw form the flat round base on the edge of which successive coils build up the wall, kept smooth by wet hands applying pressure from both inside and outside. The lower half is allowed to dry an hour before the upper half is completed and four handles added. The vessel is then allowed to dry several days before it is decorated with a red ochre paint. The firing takes place outside the village. Over the bottom of a newly excavated depression a thin cover of dung ash serves to absorb moisture. Around and between the thirty pots in the shallow cut is stuffed dung, straw, mats, baskets and everything is saturated with oil. In two or three hours after lighting the pots have cooled. Some require additional firing before they are 'ripe'. In a year the average household requires two *hishshiyeh* (storage jars), three *'asliyeh* (medium jugs), five *zibdiyeh* (bowls), ten *mughṭas* (small jugs), six *ghaṭat ṭudshara* (cooking pot lids), and six *ṭabun* (baking ovens). Some women potters of Ramallah and Silwad travel to villages and make pots. They provide only the skilled labour. Others are required to provide the materials. Such vessels are not to be found in shops where only those made in Gaza and Hebron are sold. Otherwise the handmade vessels reach other villages as gifts or by exchange (Einsler, 1914: 249–60).

The only published ethnographic observations growing out of an archaeological context are the work of Grace Crowfoot during the excavations of Sabastya (1931–35) by her husband, J. W. Crowfoot. Here she recorded the system of a woman potter recently removed from Kafr al Labad (Crowfoot, 1932: 183–86; Franken, 1971: 237 note). It was not only the likeness of a 9th-century BC 'foot bath' (*waḍu'*) to a vessel of similar form from Sinjil and Nahhalin but also parallels between medieval cooking pots excavated from a room on the west side of the Church of St John the Baptist at Sebastya and similar vessels from late occupation in monasteries at Rumeileh and Khan al Ahmar (St Euthymius) which encouraged her ethnographic researches. The cooking pots were distinguished by two types of handles. The horizontal loop handles were still being made at Kafr al Labad while the heavier perforated ear-handles from the other two sites were still being attached to cooking pots made in al-Jib. The resemblances in form were reinforced by similarities in fabric. These observations led to brief studies of women potters in both villages. The clay used by the potters of Kafr al Labad was brought from Burka, 8 kms. east, while the calcite came from Kafr Qaddum, 8 kms. south. For a cooking pot the mixture was one-third calcite to two-thirds clay. After the two elements had been well mixed the paste was allowed to 'rest' for one to three days. The potter began the forming process by punching her fist into the middle of a hump of clay, hollowing and smoothing the interior (cf. Hampe and Winter, 1962: 3, FIG. 1, PL. 25). The pot was begun in the afternoon, allowed to dry overnight, and finished the next morning when the handles were applied and the rim completed with a coil thinned by hand. After a drying period of two or three days the pot was turned with a knife and the flat base was rounded. Burnishing a slipped surface with a cockle shell required most of the day. Before firing, pots were placed in a corner of the *ṭabun* for drying. For firing the pots were stacked in an open kiln with their mouths facing windward. The fuel was prickly pear branches for a fire that lasted about an hour. This form, the cooking pot (*qidri*), was also made at al-Jib with minor differences in technique apart from the heavier handle. The

major differences were less polishing and more decoration in the form of puncture patterns on the shoulder.

Again, in search for parallels to mat impressions on pot bases found in Jericho VIII, as well as Ghassul III and Sites D, E, and O in the Wadi Ghazzeh, Grace Crowfoot discovered women potters fashioning vessels on coiled straw mats at Ramallah, Awarta, Sinjil and Ya'bad (Crowfoot, 1938). It is in this context that she briefly describes what she regarded as a very 'archaic' pottery industry at Ya'bad in 1935. Again, a woman potter was working by hand with a *huwwar* paste having a high calcium carbonate content. This marl was mixed with grog except that for cooking pots calcite was the usual non-plastic. The vessel, in this case a *wadu'* (footbath), was punched and pinched from a lump of clay centred on a coiled mat. The finished bowl dried on the mat. After being covered with a red slip, the surface was burnished with a cockle shell. The pots were fired in a dung-fed open kiln. The Ya'bad repertoire included the cooking pot (*qidri*), brazier (*kanun*), sieve (*qasriya*), water jar (*zir*) and washbowl (*sifl*). Mrs Crowfoot wants us to believe that Chalcolithic mat impressions on the bottom of vessels resulted from much the same process as that she witnessed at Ya'bad. This inference, based on an ethnographic analogy, is sound as a hypothesis for various reasons, but she has not proved the connection and until there is direct historical stratigraphic continuity, the line transmitting technical tradition is broken. The major gap is the Ottoman period. Archaeologists have not bothered to publish well-excavated, stratified Ottoman deposits in all of Palestine.

The archaeologist needs a conceptual framework to help develop tests and models that correlate the more complete ethnographic record with the fragmented and decomposed archaeological remains without sacrificing the uniqueness or integrity of either cultural assemblage. The validity of cultural parallels increases if the archaeological and ethnographic sources have one or all of the following similarities: 1) the same subsistence level, assuming that the archaeological evidence available is used to gain an understanding of this aspect of the past; 2) ecological conditions are approximately the same; 3) the two have the same general level of technological development; 4) and, finally, where an uninterrupted continuity of environmental manipulation and settlement in a restricted region can be demonstrated, ethnography is likely to contribute much relevant data to archaeological interpretation (Ascher, 1961: 320; Allchin, 1978: 1f; Anderson, 1969). Since these boundaries are generally accepted by New and Old World archaeologists, the ethnography of pre-industrial villages in Palestine would seem to be a vital source for testing archaeological interpretation. Unfortunately, apart from the work of Gustav Dalman (Dalman, 1928–42) and two essays by Dr T. Canaan (Canaan, 1932–33), very little ethnography has been systematically collected that the archaeologist can use. It therefore is of the utmost importance that a major effort be made now to collect, record and interpret those aspects of material culture that tend to be preserved, such as various forms of architecture, tools, and ceramics.

It is necessary, however briefly, to consider the problem of analogical thinking if we are to systematically exploit the usefulness of ethnographic data. It is usual to assume that the number and importance of agreement in formal traits establishes the basis for an analogy. Yet it is also the nature of the relationship between the analogous data and the archaeological evidence that must be demonstrated. Since in a holistic approach to the social sciences the sum is viewed as greater than the parts, it may be assumed that a mathematical correspondence is not what is meant by analogy when applied to archaeological interpretation (Gjessing, 1975: 323f). Rather, 'it is an inferential argument based on implied relationships between demonstrable similar entities' (Binford, 1967: 3; 1972). To argue from what is present to what is absent is to infer. Since we are dealing with data that is present but from two different sources, the task of inference is to demonstrate the relationship not only of the physical objects but also of their process and function. In other words, the purpose of probing the connection of objects from two different sources is to study the similarities and dissimilarities of elements in a cultural continuum that ultimately permits the segregation of distinctive culture types which may not be chronologically bound, that is, stratigraphically limited. To probe the relationship, a trait list may be established which is designed to correlate important determinants. A list of features may be chosen with a particular objective, e.g. process of construction. Our source of information is architecture or artifacts, in some way reflections of the mental images or templates of an artisan in a particular craft tradition. It is therefore inevitable that the first valid inferences must be based on a trait list seeking to produce technological process statements. The artifact type that emerges thus becomes the basis of a sub-culture definition, one important goal in archaeological reconstruction. Beyond the reconstruction of the manufacturing process the functional dimension of cultural systems is increasingly capable of analysis (Gjessing, 1975). Archaeological evidence has its own internal structure as well as external location in the debris. Both sources of information can provide meaning independent of ethnographic analogy (Binford in Chang, 1967: 234f; Yellen, 1977). Such independent models of interpretation are particularly important for Pleistocene assemblages (Freeman, 1968). However, the function of the ethnographic source is to facilitate testing hypotheses and provide a model for social structures reflected in the archaeological record. Within such a conceptual framework we may turn to the specific problem of reconstructing a ceramic techniculture.

It is now generally clear to everyone that information lies deep inside ceramic material which can, properly observed and recorded, illumine not only the technological understandings and capabilities of an ancient community but also distinctive craft traditions. Ceramic technology frees the archaeologist

from the exclusive grip of the typology of external traits so that, in a word, we begin to move from the profile of the pot to the profile of the potter as a representative of a unique cultural tradition. In the history of the study of Palestinian ceramics two teams of researchers have made notable contributions, viz., Kelso and Thorley (1943) and more recently Franken and Kalsbeek (1969, 1974, 1975), as well as Hammond (1971). The first work was done in Pittsburgh, Pennsylvania, USA and the second in Leiden, The Netherlands. Neither team has included ceramic ethnography as a component in its investigation. Both Thorley and Kalsbeek are superior potters whose hands and eyes are skilled and observant. Yet the absence of the ethnographic factor, so often advocated by F. Matson (Matson, 1972: 211–23), has left these important contributions deficient at important points. They would doubtless be the first to admit these defects. They are pioneers. However, it is no longer true that they need merely feel their way. Much relevant work has been done in other parts of the world that may serve as guides (e.g., Thompson, 1958; Shepard, 1956: 49–94; J. G. D. Clark, 1951: 49–65; Matson, 1974). Even for the professional potter, as Thorley and Kalsbeek, an ethnographic experience would 'sharpen (his) awareness of critical data which now go unrecognized' (Foster, 1960: 213). Statements are made in these reports which are in reality assumptions or hypotheses which must be tested. Inferences from surface indications of ancient ceramics need to be tested. Kalsbeek certainly and Thorley probably tested their views by replication. Unless one has the ethnographic facts, however, one is not sensitive to the cultural conditions of Palestine.

In the absence of a usable body of ethnographic lore about traditional potters in Palestine it would, however, be gratuitous to criticize past and present ceramic technology teams for not taking such information into account. With the enlarged horizons of modern archaeology, however, it may be useful to illustrate the potential contribution of ceramic ethnography not merely toward improved statements about ancient technology but also toward increased awareness of use and function of pottery in an ancient social setting. Beyond technology as a manufacturing process to the use and meaning of objects is techniculture (Osgood, 1951: 212). The following notes on the wheel, fuel, use and ceramic ecology are intended to move from technology as an end in itself to techniculture as a living system in a social context. While the data may not allow the reconstruction of entire systems they can be pushed far with appropriate questions (Trigger, 1971: 329–32).

It is not entirely clear how descriptions of the wheel in ethnographic literature will facilitate our understanding of ceramic techniculture. While there are no details published for Palestine, Hankey's helpful study of the unique Beit Shebab potters in Lebanon describes a wheel (Hankey, 1968: 28, PLS 7, 8, 13) very different from the tournette used at Kornos and Phini in Cyprus (Hampe and Winter, 1962: PLS 24–28, 30–35; Johnston, 1974: 132–39). These ethnographic data would perhaps not essentially alter the insights of Kelso and Thorley (1943: 97–9) or Franken and Kalsbeek (1969: 92) but it would make possible testing their assumptions about the presence or absence of a wheel by forcing a more precise definition of wheel. A wide variety of rotary systems have been and are being used by traditional potters (Foster, 1956: 395f, PL. 1; Childe, 1954: 195–204). Socketed stone pairs sometimes turn up in excavations. These are not proper wheels but served as the pivot for a turntable (e.g., Amiran, 1978: 57, PL. 77: 5–8). Ethnographic study would also add a refined sensitivity for local creativity as well as a diachronic perspective. Fuel is another factor that can be better studied with ethnographic data available. Matson has suggested that one of the earliest technological uses of fire was to bake pottery (Matson, 1966: 149). Indeed, '. . . a knowledge of current practices will at least give one some notion of the great variety of materials used' (Matson, 1966: 151f) as fuel. Understandably in early studies the fuel problem is merely mentioned (Kelso and Thorley, 1943: 112) or discussed generally (Franken, 1969: 96; 1975: 57f). It is still possible to measure the heat levels of various dung fuels in either open or kiln fires where the few traditional potters still work.

Whether or not the fact that 'terms for ceramics in English tend to describe form rather than use' (Fontana, 1972: 10) is in part responsible for the absence of serious consideration of use as important to the cultural meaning of pottery requires further study. Unfortunately ceramic technology usually stops short of a consideration of use. Thorley's interesting volumetric calculations seem to him chiefly a 'clue to the refinements of pottery technique' (Kelso and Thorley, 1943: 122f) with not a word about use where size and volume would seem to play an important role. Shape, wear, surface treatment and porosity also offer clues to use (Matson, 1965: 204–09). Franken offers many important technical comments in his discussion of sugar pots (Franken, 1975: 143–47) with no attention to use. His perspective is that of the potter and not the consumer. The history of ceramic techniculture begins with a study of the function of pottery in the ethnographic present to both potter and consumer as test and control for proposals of earlier uses (Crowfoot, 1932; Solheim, 1965).

In yet a fourth way ceramic technology can become more useful as a tool in archaeological interpretation. If pottery production and use is viewed as an adaptive sub-system in a cultural tradition, the knowledge of the unique factors of the ecological context will contribute to the interpretation of the results of technological analysis. F. Matson, who is as responsible as anyone for introducing archaeologists of the Middle East to the values of technological studies of ancient ceramics, formally introduced this perspective fifteen years ago (Matson, 1965). Though still very commonly ignored by archaeologists (Arnold, 1975b), pottery production certainly and use possibly can best be understood within a climatic and resource ecological niche. An open-ecology approach seems best adapted to the study of ceramic techniculture where the system includes cultural as well as natural factors (Trigger,

1971: 329). One can hypothesize that the diverse climates and geomorphology of Palestine should in a discernible way have an impact as great as cultural factors on pottery production. Most archaeological reports seem to assume that pottery found in the tell, if not obviously imported, was made on the site. Little study has yet been attempted to deal with production and trade of pottery in Palestine (Amiran, Beit-Arieh, Glass, 1973). To pursue this problem requires not only research into the ecosphere of separate regions but use of a production and trade model based on ethnographic facts. Where there is reason to presume continuity of cultural traditions such a model should serve at least to stimulate further hypotheses about older systems.

With the foregoing historical and conceptual background it may now be appropriate to report briefly on my search for a system for presenting the Bronze Age pottery of Tell Ta'annek that will not only advance our understanding of the sequence of ceramic horizons but also contribute to a reconstruction of the craft tradition and the social function of the pottery products. By early 1973 I was convinced that a ceramic technologist was the key to what we were intending. It was our good fortune that Owen Rye, then with the Smithsonian Institute and now with the Australian National University, was available. As a potter, trained as a ceramic technologist, with several years' fieldwork as an ethnographer in Pakistan (Rye, 1976), he combined the skills and experience needed. On three occasions (1973, 1975, 1977) he has made detailed studies of traditional potters at work in the West Bank and Gaza, as well as careful analyses of the surface features of the pottery from Tell Ta'annek. In 1975 John Landgraf began to assist in the ethnographic aspect of the project by concentrating on women potters when Rye was not in the country. When published, these two efforts will make accessible more reliable information on the traditional potters and pottery of Palestine than has been available heretofore. The aim of the ethnographic research is not merely to assist the archaeologist but also to put together a body of material that will provide clues leading to a more adequate appreciation of the total history of the ceramic craft in Palestine. Unfortunately the end of an 8,000-year tradition seems to be in sight.

My own effort has been to develop systems for identifying, clustering and classifying significant information relevant to reconstructing types of raw material, technological process and use (Glock, 1975). The presentation of pottery in drawn form has now been developed to where many of the forming features on both surfaces are recorded. For the first time a realistic schematic of the cut section will provide clues to both materials and process. Rye has provided an illustrated synthesis for systematically identifying the several steps in a reconstruction of ceramic technology in archaeological materials from Tell Ta'annek. The elements of an encoding system have been developed. It is of course not possible to research every question. Our basic aim is to develop a system that is practical for general archaeological reporting and yet considerably more sensitive and revealing regarding the ceramic process. Both the ethnographic and the archaeological materials will be presented in a report that focuses on a set of common technical and functional problems (Binford, 1968: 270f).

In the history of archaeological interpretation there are many debts to ethnographic analogy (Orme, 1973). What life was breathed into the ancient ruins of Palestine, however, was less a consequence of a considered study of traditional life ways surviving in the land than the correlation with biblical and other literary sources which presumably reported events not merely in the region but at the precise location of the excavation (e.g. Kyle, 1934). The consequence has been not only an optimistic view of the historical probabilities of the biblical record but also a prolonged delay in the felt need to develop a rigorous system of analysis that attempts to say no more or no less than the physical evidence warrants. A systematics for the use of the Bible in archaeological interpretation remains to be developed (Glock, n.d.). On the other hand, ethnographic analogy has been demonstrated to be capable of controlled illumination of otherwise mute archaeological evidence. While the average excavation is not rich in museum pieces it does contain ample clues of the system of a once-living community. Pottery is one category of that debris that contains evidence which analytic instruments and ethnographic facts together with a rigorously and creatively applied system of analogy may help reconstruct elements of an extinct techniculture.

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