

## Ceramic Ethno-archaeology and its Applications

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Ethnoarchaeology includes a joint approach of archaeology and anthropology to understand the past and present cultures. It is a branch of ethnography, which deals with the behavioral correlates of material remains. Gould (1968) termed it as 'living archaeology' and Kleindienst and Watson (1956) defines it as 'action archaeology'. Stiles defines ethnoarchaeology in more comprehensive perspective as, 'encompassing all the theoretical and methodological aspects of comparing ethnographic and archaeological data, including the use of ethnographic analogy and archaeological ethnography' (1977, p.88). In other words, it is a living archaeology in which archaeologist does his field work among living communities for the analysis of unearthed artifacts and material remains. It is assumed that contemporary primitive societies represent examples of past stages of human culture. Analogies between living societies and ancient societies can yield important information to construct realistic models of ancient societies and their functions. The practice of this discipline provides a great understanding about ancient artifacts and the people who made them. It is not only the recording of material remains but also the interpretation of them by quantitative analysis, sampling strategies and observations (London 2000, pp.1-2). Therefore, this approach gives extremely valuable insight into prehistoric and protohistoric human behavior. In this respect Ethnoarchaeology makes a live link between human and their artifacts (David1992, p.352). This approach is mainly used by archaeologists for the explanation of pottery, stone tools and architectural remains, but it is also useful for the reconstruction of cultural system.

### Significance of ceramics and Ceramic Ethnoarchaeology

Ceramics are very important material remains, which are abundantly found in archaeological investigations. These artifacts are formed from clay and made durable by firing. Mostly containers (commonly called pottery) are included in this type of artifacts, but a verity of other items, such as figurines, tablets, tiles and pipes can also be placed in this category. Among all other ceramic artifacts pottery is the most significant source of information to produce a reconstruction of human behavior in archaeological studies. Pottery commonly recovered in the form of sherds in archaeological excavations and explorations. Potsherd is not just an archaeological object but it is the end product of the interactions of raw material, culture, and technology. It is most useful material remain for archaeologists to identify the resident culture and determine the chronology of the stratum. Style and decoration are also important for the knowledge of social and economic systems. It plays critical role in many economic, social, ritual and artistic contexts. Different types of ceramics reflect specific time period and place zones. It is assumed that minute study of potsherd offers considerable promise in achieving an understanding of site chronology, culture and trade patterns (Sutton and Yohe 2003, p.151). Thus, in archaeological studies pottery generally used to build chronologies,

identify style zones, explain migration of communities and interaction between regional levels. With the help of ceramic artifacts household size, economic differentiation, craft specialization and social structure can also be reconstructed (Kramer1985 p.78). Pot sherds are not only useful to know about shape, size, raw material and production techniques but they also reflect potters taste and idea towards beauty and significance (Glassie, 2000, p.17).

It is always a hard task for an archaeologist to reconstruct the realistic model of past cultures and ceramic functions. But reliable model of the past culture can be made by the application of ethnoarchaeological approach, because until recently, with the exception of some most industrialized nations the ceramic ware are produced and used all over the globe. Reconstruction of manufacturing techniques and use behavior associated with them can also be traced by this approach (Ashmore and sharer 2000, p.170). The application of ethnoarchaeological approach on ceramics yield fruitful insight into the pottery manufacturing, patterned human behavior and material culture. It has opened an exiting field for exploring the pre and protohistoric potential in the present communities. It normally describes manufacturing techniques, vessel functions, aspects of division of labour, social organization of production, scalar and spatial aspects of production and distribution (Kramer1985, p.77). In a broader perspective it involves social, ecological, economical and functional factors (Stark, p. 202). Hence, ceramic ethnoarchaeology has emerged as an important sub-field of ethnoarchaeology.

### **Major works done in the field**

An attempt to explain prehistoric stone tools with the help of ethnographic analogy was made by De Jussieu in the early eighteenth century. Afterwards Solla, Cushing, Fewkes and Hodge made some efforts to coordinate ethnography and archaeology (see Stiles1977, p.89). Jesse Walter Fewkes was the first person who used the term 'ethno-archaeologist' in his study of Tusayan migration of traditions (Fewkes 1900, pp.578-79). Some description of pottery manufacture can be found in research of the American southwest in early nineteenth century (London 2000, p.1). Morgan, Tylor, Spencer and others used ethnographic data to explain archaeological antiquities in the later part of nineteenth century. In the early twentieth century several researches were conducted within the living communities in order to explain prehistoric societies. But these studies have tended to focus on hunting and gathering peoples and their activities rather than pottery and potters. Bade (1931), Grace Crowfoot (1932, 1940, 1957) and Hankey (1968) has described local potters in their respective studies. Tufnell has pointed out her observations of traditional potters from Saudi Arabia and the Levent in her studies of Lachish pottery (London 2000, p.1). Nevertheless, few attempts were made with direct historical approach to describe the relationship or connection between past and present ceramics (see Deniel Stiles 1977,pp.88-90 ; Gloria London2000,pp.2-6; Nicholas David and Carol Kramer2001,chapter 1 and 2; Miriam T. Stark2003, pp.193-196 for the development in ethnoarchaeology and ceramic ethnoarchaeology). Carol Kramer has carried out ethnoarchaeological researches with the explicit purpose of understanding ancient artifacts. Her edited book (1979) 'Ethnoarchaeology: Implications of Ethnoarchaeology for archaeology' illustrates various aspects of direct historical approach of ethnoarchaeology for reconstructing the past. Her review, which was

published in 1985, is a mile stone in the field of ceramic ethnoarchaeological research. She concentrated her study on the questions often posed by archaeologists and described ceramic production, social organization, ceramic use and disposal, ceramic change and style in detail. In the 1980s she conducted her studies on the pottery and potters of Rajasthan ( India) and publish it in the form of a book entitled 'Pottery in Rajasthan: Ethnoarchaeology in Two Indian Cities'(1997).Her book 'Ethnoarchaeology in action' co-authored with Nicholas David (2001) also provides an extensive array of ethnoarchaeological research. During last 20 years several studies (see Sinopoli 1991a,b; Rice 1999; Krishnan 1997; Arnold 2000; Costin 2000; Hegmon 2000; London 2000; David and Kramer 2001; Stark 2003) have been done to explain technological as well as social and ritual issues through ceramic ethnoarchaeology. Although considerable ceramic ethnoarchaeological research has been conducted throughout the world rather less attention has been paid to Indian pottery and potters.

### **Applications of Ceramic Ethnoarchaeology**

The artifacts gathered in the archaeological investigations reflect human behavior, surrounding environment and ecological situation of the past. But the reconstruction of realistic models of past social and economic conditions with these artifacts is not an easy task; it needs deep imagination and reliable hypothesis. Ethnoarchaeological approach made this exercise simple to gain insight into the artifacts. This approach is much more important for the explanation of pre and protohistoric cultures. In historical reconstruction, archaeologist often relies on literary sources to identify archaeological remains, but in pre and protohistoric context archaeologist must rely on inferences using analogy (Ashmore and Sharer 2000, p.170). In this approach archaeologist first collects the ethnographic data that is useful to explain ancient material remains and the people associated with them. Early written accounts of ethnographic studies, museum collections of material culture, experimental studies done in controlled form and the explicit ethnographic fieldwork provide useful data for archaeological interpretation. Among all above sources direct observation of existing primitive societies is most useful for appropriate information. The collected data are generally used by the archaeologist in ethnographic analogy, generation of hypotheses and testing of hypotheses. In ethnographic analogy archaeologist compare the ethnographic data and analogous archaeological data to explore the possibilities of some resemblance between living culture and past culture. This type of analogy is known as 'folk culture' or 'direct historical approach' (stiles 1977, pp.91-94). The ethnographic data is also used by archaeologists to formulate hypotheses about the past human behavior and then these hypotheses are tested by archaeological data. After the individual or integrated application of above-mentioned methods model of the past cultures can be formed.

Pottery has traditionally been seen as a product of the pre and protohistoric cultures. But it is still in use throughout the world by different societies and tribes as their requirements. Thus, it contains a great potential of the application of ethnoarchaeological approach. In the protohistoric civilizations it was used to transport, cook and store a wide range of foods and other supplies. But as societies became increasingly complex, pottery also assumed other specialized functions, including such ritual uses as burial urns and incense burners. Analysis of ancient pottery remains may reveal clues about manufacturing behavior, but in contrast to a subtractive technology such as the

manufacture of stone tools, pottery involves a plastic, additive technology. Manipulation of the clay in the later stages of manufacture often obliterates the diagnostic markings and features left by earlier stages. The only way to overcome this difficulty is to use analogy with documented instances of pottery production today. Observing actual production and matching these with similar features on ancient pottery may recognize clues of protohistoric life (Ashmore and Sharer 2000, p. 121). Correlation between ancient potsherds and contemporary pottery provides useful insight to build hypotheses about protohistoric human behavior. Shape, size, slip and decorative motifs contain greatest amount of information about a culture. Decorative motifs on the pottery often suggest about individual groups and their emblems (Hegmon 2000, p.132). The ecological information can also be collected from the faunal and floral designs. These pottery characteristics are useful to distinguish ethnolinguistic group and production communities from one to another.

The realistic model of pottery technology as well as socio-economic structure of protohistoric societies can be traced by the keen observation of whole pottery production process. Observation of the form, manufacture, distribution, disposal and use of pottery in present world provides a great insight into the protohistoric technologies and usage. The process of collecting and converting ethnoarchaeological data for the interpretation of material remain involves certain needs. According to Gloria London(2000, p.7) a carefully constructed research design, selection of a appropriate community, an extended time in the field, knowledge of the language, keen skills of observation and experience with ancient material culture is essential to conduct ethnoarchaeological research. Longacre (1991b, p.1) emphasizes that ethnoarchaeological fieldwork should be conducted by archaeologist himself and he should stay in the field for a long duration to observe and record the work minutely. It is also required to give special attention towards the continuity and discontinuity of the design patterns, vessel size, vessel function, longevity, recycling and disposal, production and manufacturing, stylistic change and firing technology, while comparing ethnographic and archaeological data. Knowledge of continuity and discontinuity in above aspects of present and past ceramic samples may establish development stages in a certain zone.

### **Scope of ceramic ethnoarchaeological research in India**

India has an unbroken tradition of ceramic manufacture; therefore, ceramic ethnoarchaeological approach has much potential to enhance the various aspects of pre and protohistoric pottery in this region. Still people are engaged in traditional techniques relevant in some way to ancient pottery manufacturing process. Rich cultural diversity and huge demographic and geographic size of India make this region an ideal locus for ceramic ethnoarchaeological research.

In spite of much industrialization and development, pottery is still an essential utensil in Indian houses. Enormous time depth can be found in India that trace back to Harappan time (Krishnan and Rao 1994). In India earthenware are also associated with some religious and ritualistic practices and considered as a pure and sacred ware. Huyler (1994, pp.323-324) pointed out that in eastern India earthenware is essential to contain basil plant, which is regarded by Hindus embodiment of their goddess Tulasi. This type

of practices reveals the importance of earthenware in society rather than metallic ware and could be helpful for archaeologists to understand past religious customs.

Some ethnoarchaeological researches have been undertaken in some parts of India by archaeologists and anthropologists to describe and explain the construction and development of ceramic production (e.g. Behura 1964,1978; Gupta 1969; Saraswati and Behura 1966; Bose 1982; Ghosh and Bhattacharya 1997; Sinoply 1988,1991a; Kramer 1992,1994,1997; Bala1997). Renu Bala (1997) has done valuable work with ceramic ethnoarchaeological approach in middle Ganga plains. She has illustrated correlation of ethnography and archaeology to explain earthenwares. Ghosh and Bhattacharya (1997) have made an attempt to explain pottery of tribes in their ceramic research. Carol Kramer's ceramic ethnoarchaeological studies in India are notable here. In 1980s she has conducted her ethnoarchaeological research on Hindu and Muslim traditional earthenware potters of Jodhpur and Udaipur in the state of Rajasthan .She published her work in some research articles (1991,1992,1994) and a book entitled "Pottery in Rajasthan: Ethnoarchaeology in Two Indian Cities"(1997). Her work is significant to understand the ceramic production, distribution, interaction in pottery manufacturing communities and style characteristics of ceramics in Rajasthan. Sinoply(1991a,b) has done her ceramic ethnoarchaeological research in a traditional rural extended family house hold workshop in Kamampuram, South India and contemporary Malwa in central India. Some remarkable works have been done with ethnoarchaeological approach in the field of bead making (Kenoyer,Vidale and Bhan 1991;Kanungo 2004) and rock art (Nagar 1983) but still less works have been conducted on pottery with explicit ceramic ethnoarchaeological approach.

Pottery recovered in excavations and explorations from Madhya Pradesh(Kayatha; Maheshvar Navadatoli; Nagada; Runija; Dangwada;Eran, Mahidpur, Awara, Manoti, Besnagar, Bhim Betaka, Mandsaur, Azadnagar, Piplya loraka, Chichali Adalpur, Pitanagar etc.in Shrotriya 2001, pp.373-394), Rajasthan(Ahar, Balathal and Gilund), Bihar and West Bengal(Kakoria, Magha, Koldihwa, Banimilia-Bahera, Takiapar, Raja Nal Ka Tila, Kausambi, Sringerapura Chirand, Prahladpur , Rajghat, Mahisdal, Pandu Rajar Dhibi etc, in Mishra2001, p.514), Maharashtra (Jorwe, Daimabad; Inamgaon; Nevasa; Chandoli; Prakash; Kaothe; Bahal; Tekwada; Apegaon ;Savalda etc. in Misra2001, p.516) provide data about chalcolithic settlements and shed light on many aspects of the protohistoric culture of India. Some ceramic ethnoarchaeological research have been undertaken on the Harappan pottery (Kenoyer 1997) but still there is a great need to describe chalcolithic pottery with this approach in above mentioned area.

### **Conclusions**

Ceramic ethnoarchaeological researches provide a valuable insight in ancient pottery for the archaeologists and a broader understanding of living potters for the anthropologists. Besides manufacturing technology; decorative motifs; size; shape; function and distribution of pottery, ceramic ethnoarchaeological research tells about man's past and present. In this sense it fulfills the goal of archaeology as well as anthropology. This approach has thus proved to be of the greatest importance of virtue of its contribution to our understanding of the human. Several studies have been done on the

various aspects of ceramic ethnoarchaeology in last 20 years around the globe. But less work yet done in India. There is also a great need for integrated research between archaeology and anthropology. Joint effort of anthropologists and archaeologists to analyze the ceramic data can reveal cultural process and change in this region.

The aim of this paper is to comprise definitions, previous researches, methods and applications of ceramic ethnoarchaeology. The present work also explores potentialities of this form of archaeological analysis in India where pottery makes up a large and significant proportion of the protohistoric record. In the present industrialized and fast growing world traditional crafts, technologies and art are deeply affected by economic development, educational reform and ensuring population pressure and led to disappear. This scenario presents responsibility for archaeologists and anthropologists to record those traditional technologies that have survived. Attention of archaeologists and anthropologists towards contemporary pottery and potters may save this craft and craftsman; in this respect it would also be a great contribution of them to humanity.

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