The Jahangirnagar Review: Part II: Social Science, Vol. 47, No. 3, 2023
ISSN : 1682-7422, ©Jahangirnagar University

An Ethnoarchaeological Study on Ceramic Use, Reuse and Discard of three Selected Villages in Wari-Bateshwar Region, Narshingdi, Bangladesh

Rupali Akter[1]

Abstract: *Pottery life-cycle stages of modern ceramic vessel use, reuse, and discard practice of Wari-Bateshwar region have been investigated to understand the variation found in potter and non-potter consumers, religion and economic rank in this research. Vessel use denoted here as prime use means use of the vessel for its main function for which it was made. The reused vessels are those that have cracked or broken during usage but are still being used for a secondary purpose. Discarded vessels are deliberately or voluntarily abandoned vessels or a vessel part having no further use. The main objective of this study is to examine how pottery is used, maintenance reused and discarded by both ceramic producer and non-producer community and how this data can assist archaeologists to interpret archaeological records.*

1. Introduction

Wari-Bateshwar is a significant archaeological site of Bangladesh. This is located almost 4 km south of the Belabo Upazila headquarters in the Narsingdi District. These two nearby settlements, Wari and Bateshwar, are located on the eastern margin of the Pleistocene Madhupur Tract. The site's growth was greatly aided by its advantageous position. The Old Brahmaputra, which is only 4 km away, is close by the site. Koira, a dried-up riverbed, is currently located to the north of Wari village. In addition, the Meghna River flows a few kilometers to the south, while the Arial Kha River is situated three kilometers to the east of the location. *Chala* (highland) and *Baid* (lowland) are the two landscape types that characterize the area, and the locals live on the *Chala* and cultivate on the *Baid* (Ahmed, 2001).

Nearly 50 archaeological sites have been discovered throughout the region of Wari-Bateshwar, and most of those demonstrate that the region had inhabitants in the Early Historic and Early Medieval Periods. As one of Bangladesh's most widely recognized archaeological sites, the Wari-Bateshwar region was chosen as a research interest. With a few exceptions, human habitation in this area stretches back before the early historic era. It is still extant now. Pottery is the most regular cultural artifact found in Wari-Bateshwar, much like in other archeological sites all around the world. Pottery is one of the most imperishable artifacts which is the main reason of its availability in an archaeological site. Most of the post have to pass the similar stages or actions in a more or less regularly recurring order from the time of its manufacture till its incorporation of archaeological record which is called ‘vessel’s life cycle’. Pena (2007) termed this action as “behavioral practice” and constructed a general model of the artifact’s life cycle.

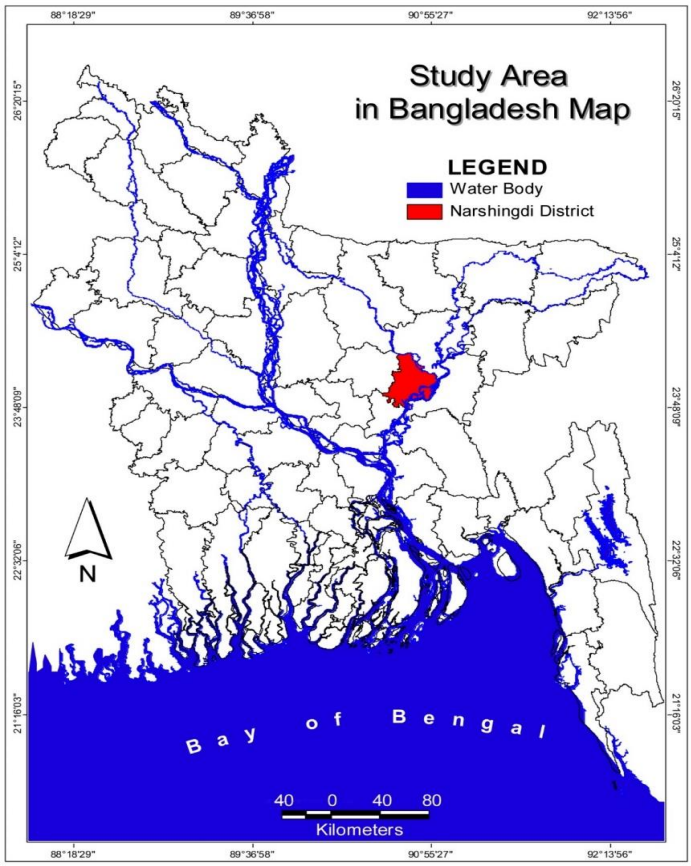
[1] Professor, Department of Archaeology, Jahangirnagar University, Savar, Dhaka, Bangladesh.
Email: rupaarch7@gmail.com

According to this model an assumption is made that every artifact is normally subjected to a sequence of four different behavioral practices in broad sense these are: manufacture, use, maintenance and discard. But he revised the model later including four more behavioral practices. These eight sequential behavioral practices of revised model are: manufacture, distribution, prime use, reuse, maintenance, recycling, discard and reclamation.

Models for archaeological household subsistence, demographics, social and economic status, and social interaction have been developed from ethno-archaeological investigations of household pottery use and discard (Deal 1998; Deal and Hagstrum 1995). A domestic ceramic assemblage's use and discard depends on the interactions between ceramic producers and consumers, which in turn depends on the social and economic ties inside the household (Arthur 2000). In this paper manufacture and distribution action of pottery has not been considered to be studied rather regarding some important research question ,the main objectives are to combines the examination of ceramics use, maintenance and discard in domestic settings from three settlements in this area. This study organizes the analysis of household ceramics use, discard data from three villages of this region. The village analysis demonstrates ceramic assemblage and difference between Kamrabo, a pottery producing village nearby Wari and Bateshwar villages, Bateshwar and Sujatpur (non-pottery producing village located near Kamrabo). The main function or the prime use of the produced pottery is not considered for study in detail here but what types of pottery is used by both potter and non-potter consumers and is there any differences exist in terms of prime use have been studied. Ceramic use and discard data collected concerning the social status, education, occupation and economic wealth of household. The phrase "ceramic use" refers to both primary and reuse. Pena defined ‘reuse’ as the continual utilization of a vessel or its part for another purpose after the end of its prime use and on the other hand he defined ‘Primary use’ as the use of a vessel for which it was manufactured. Furthermore, he defined ‘discard’ as the vessels, or its part being intentionally left behind with an intention to not use it anymore (Pena 2007). Industrial vessels play an important role in reducing ceramic use at present day both in potter and non-potter communities. We must first discuss the types of the industrial vessel utilized by both potters and non-potters before analyzing the use and reuse of ceramic vessels.

2. Methodology of the study

The ethnographic research approach has been used to conduct this study. The most popular approach in ethnographic research is ethnographic fieldwork, which require gathering information using established techniques like participant observation and interviewing (Sarantakos, 1998). According to David and Kramer (2001), observation is the best method for any ethno-archaeological study. They also pointed out that evidence gathered from observation is more persuasive when an interview is added to it. In this study, both the question-and-answer approach and the interviewing method were used. A semi-structured questionnaire was formed to interview the participants. At Kamrabo 30 families have been studied, among them 15 families are pottery producing families, 15 are non-potter household situated adjacent to the potter community. At Bateshwar, 25 families have been analysed whereas 26 families from Sujatpur village have been observed.



Map 1 : Study Area in the Map of Bangladesh

Out of the various sampling methods, in this research, purposive sampling procedure has been applied for selecting the potter and non-potter consumers' household and sample size was not determined. In purposive sampling, the population is not chosen at random but rather based on a certain feature. In purposive sampling, samples are chosen based on the aims of the study.

3. Results and discussion

3.1 Industrial types

The replacement of ceramic with industrial types among the people of this region has had dramatic effects that have been witnessed in another part of the world. Industrial types are common in the non-potter household as well as potter household. They use various types of industrial vessel for various functional purposes. For everyday cooking aluminum vessel is used in most households. For serving food the potter and non-potter both use steel and melamine vessels. Food is served in industrial ceramics vessels for the guest. Industrial ceramic cups are used for drinking tea. Plastic vessels are another popular industrial type. A large range of plastic vessels is used by potter and non-potter consumers including jug, mug, bowl, basin, bucket, long spouted vessel (*badna/lota*). Vendors travel to the non- potter as well as potter villages to sell industrial types of vessels. Households of low economic wealth have a least number of industrial ceramic

vessels but a large variety of aluminium, melamine and plastic vessels are used. On the contrary household of medium or high economic group has a large assemblage of industrial ceramics type. The only difference that has been observed between the potter community and non-potter community is that almost every potter household uses water pitcher. They have not replaced clay water pitcher with the aluminium pitcher. Only cooking pan (*tawa*) is used in baking *ruti* for morning meal or breakfast. Observing the present use of pottery type in this region it is seen that the consumers use such type of pottery which industrial version have not made yet or is not available to the consumer and expensive to the consumers and these types of pottery vessels is more effective or workable for special function than its industrial type.

3.2 Prime-use

Consumers of Kamrabo and Sujatpur use various types of vessels for prime use. Most types of vessels they use are related to food preparing, processing, or cooking; but they cook occasionally in this vessel. For example, *poin* (cake steaming pot) *dailya* (curd pot), *jhanjor* (puffed rice siever), *khola* (cake baking pan) is not used every day. Only one type of cooking pot, *tawa* is used every day by some family but most of the users do not consume *ruti* every day. So, it is used less often in some families.

The percentage of pottery types (Table 1.) found in each of the villages is almost similar though some differences can be observed. In these villages, lid (*shora/dhakna*) is the most used vessel, *malsa* is the 2nd highest, and *tawa* is the 3rd highest used vessel .The lid is only pot that many families have more than one in number. Lid is used mainly covering the food during cooking and it takes longer time to heat up than its alternative industrial aluminium type. *Malsa* is widely used for cleaning and washing fish and is needed by most of the families of these villages.

At Kamrabo, there is a much larger proportion of water pitcher (73.33%) than is Bateshwar (40%) and Sujatpur (30.76%). The reason behind it has been stated before that potters use their produced water pitcher to store or carry water. Medium or small sized water pitcher are also used for religious purpose by Hindu potter and non-potter consumers during Puja, marriage ceremony and cremation time.

Table 1: Percentage of vessel types and their use in the three villages.

Used Pottery	Kamrabo(n=30) Percent (n)	Bateshwar (n=25) Percent (n)	Sujatpur (n=26) Percent (n)
Tawa (Bread/ruti baking pot)	86.66 (26)	80 (20)	69 (18)
Malsa (Basin)	82.66 (29)	88 (22)	73 (19)
Dailya (Curd Pot)	10 (3)	8 (2)	15.38 (4)
Poin (Cake steaming pot)	63.33 (13)	60 (18)	58.46 (10)
Kalash (Water pitcher)	73.33 (22)	40 (10)	30.76 (8)
Kanjighat (Rice fermention vessel)	33.33 (10)	8 (2)	11.53 (3)
Jhanjor (puffed rice siever)	40 (12)	40 (10)	30.76 (8)
Shora/Dhakna (Lid)	100 (30)	96 (24)	86.46 (23)
Khola/Sanj (cake baking pan)	60 (8)	80 (20)	79.92 (20)
Money Bank	13.33 (4)	8 (2)	7.69 (2)
Pigeon feeding vessel	3.33 (1)	4 (1)	7.69 (2)
**Chari* (Cattle feeding largebasin)	13.33 (4)	28 (7)	23.07 (6)

*This vessel is not produced in this region, imported from other places.
But potters rarely make this type for their own use.

It is difficult to draw a picture of the actual use of different ceramic types. Some household borrow some pottery vessel specially *poin* and *Jhanjor* from other household to prepare cake or *muri* in special occasion or festivals for short periods. Social status and economic wealth have less effect in using pottery. In this region, people of every social strata use almost same type of pottery, there is no notable variation is found. This information has not been included in the table 1.

3.3 Maintenance and mending vessels

Maintenance refers to upkeep like washing and cleaning after its use or repairs made to a vessel so that it can carry out its intended function. Washing or cleaning is a routine work following a vessel's use but people of this area usually do not mend their vessel. Among 81 households of three villages only three households have told that they mend the broken *chari* (cattle feeding large basin). Cement is the most common material for mending this vessel. Potters of this region do not produce this type of vessel. This vessel is black in colour and imported from another region. People who use this for cattle-feeding purchase it from distant markets (Belabo Bazar), it is a more expensive pot than the pots that are not mended. The cost of the mended vessel indicates it has an economic value to the household. The mending of vessels consists of a transformation between the primary and reuse stages with curation prolonging the household use and value of the vessel.

3.4 Reuse of vessel

In my analysis, I have considered the reuse of vessels as those that have cracked or broken during usage but are still being used for a secondary purpose. Pottery reuse and household storage data has been shown in table 2.

There are differences among three villages in the range of types that are the most and least common to reuse. The *khola* (cake baking pan) and *malsa, kalash* (water jar) is the most common reused vessel types in Kamrabo, Bateshwar and Sujatpur. The reason that *khola* is a shallow pan which is easy to use for feeding duck or chicken or take out ash from the hearth (Pl. 1) Water jar is useful for secondary functions such as to store excess crops. Certain vessel types such as *poin, jhanjor* are perforated that makes them difficult to reuse for secondary function. These two vessel types are usually discarded or placed into provisional discard. These vessels are discarded as broken sherds into the tube-well area around the base of the tube-well. Pre-fired broken pottery is also dried again and used around the base of the tube-well as these sherds soak water quicker than fired sherds, the area is not covered by brick and concrete (Pl. 2). The breakage rate of *tawa* and *malsa* are higher than *poin* and *jhanjor* because former group is used frequently than the later groups. *Malsa* is used every day whereas *poin* and *jhanjor* are used only 2-4 times in a year. One household of Bateshwar village have been using a *poin* since 2002 and after being used for so many years this red pot turned into red -and -black pot and outer black surface of this pot is shiny.

Dailya is one of the least reused vessels. This vessel is rarely used in household but frequently and in a large number is used at sweet shop. Curd is not prepared in second times in *dailya* that has been used once. People reuse it by placing in front of their door of the house during rainy season to protect soil from erosion or keeping ash. Tree

plantation in a broken or unusable pot is another type of reuse practiced by few households (Pl.3).

Table 2: Percentence of village household, the reuse types and vessel storage during reuse.

Reuse types (Vessel types)	Storage location during reuse	Villages		
		Kamrabo n=30	Bateshwar n=25	Sujatpur n=26
Kitchen maintenance (*Khola,Malsa*)	Kitchen/adjacent to kitchen	60.54%	75.9%	80%
Animal husbandry (*khola, daillya, malsa, dhakna*)	House compound	30.6%	40.2%	25.8%
Gardening (*Malsa, daillya, khola)*	House compound	5%	5.7%	5%
Construction (any type)	Wall and floor of a room	---	4%	4.2%
Protecting erosion of soil (*daillya*)	House compound	7%	12%	10%
Storing crops *(kalash)*	Any type of storage area	50%	30%	25.6%

3.5 Discard

The provisionary discarded vessels are represented as the pots were broken in infirmed state and had has no further function. Discarded pots have either broken and immediately discarded or recycled for a secondary function and eventually discarded. The ceramic consumers place their discarded pot under tree or at a corner of the yard of house or back side of the house.

The consumers may someday find a function for these, such as reuse the discarded jar to collect rainwater or to dip betel-nut into water and fermented that is called reclamation stage of a vessel. Reclamation refer to the acquisition of a vessel or a vessel part after its discard. However, they may break them into large sherds that also may provide a household function such as carrying fire (used instead of incense burner) for purifying the kiln before firing the pot, taking out ash from the hearth or carrying fire from one household to another to light a hearth. The discard rate is different in pottery producing village and non-pottery producing village. Potter household discard a large number of vessels of various types. Their discard pattern is also different from non-potter consumers. They sell repeatedly refried broken pot or shreds (used in the kiln during firing the new pot) to the person who recycle it by breaking into small pieces and reuse it mixing with the mud to make mud wall of a house (Pl.4) or to build the floor of a house mixing it with sand and cement and brick pieces so that they need less brick and can reduce the cost. Potter household accumulate their discarded pot at the corner or backside of the house (Pl. 5). They placed their broken shreds on the road (Pl.6) Potsherds are also found on the ancient road excavated at Wari-Bateshwar archaeological site (Pl. 7). Broken sherds are seen everywhere in the courtyard or around the house of a potter's

community and become part of the land though women sweep the compound to clean everyday morning. A common sight along the footpath of all potter's villages is imbedded sherds. The sherds are repeatedly walked over and they become part of the pathway. This accumulation of sherds in the footpaths or road provides people with traction during the rainy season. Non-potter consumers placed the discarded pot at any corner of the house for some days. If the vessels break into sherds or they do not intend to further use the vessels, they throw these vessels into their garbage depositional area. They deposited garbage, trash, or rubbish into a depression around their house. Data was collected of depositional behavior from these households. 60% household deposit their discarded household materials into a small depression located in the back of the house, 10% household throw it into a corner of the field near house, 7% throw it into the back of the house but not into a trench., 5% household deposit their garbage into a bush near or back to the house, 3% household throw this in the household garden. But 15% of the potters deposit all types of discarded materials into the roadside trenches.

Two different types of use, reuse and eventually discard pattern have been noticed in this study. After death of a Hindu person, a new medium sized red coloured jar is bought. This pot is broken into pieces during cremation and finally discarded in that place. In most places in the country this cremation ground is situated on the bank of the nearby river (Pl. 9). Sometimes farmers reuse a black pot or transfer a used red pot into black colour using charcoal to protect their corn fields from birds. This is hung on a bamboo bar and is discarded there after breaking (Pl.10).

3.6 Archeological Implications

With the passage of time vessels once used became a part of archaeological record. Ethnoarchaeological analysis allows archaeologists to observe and interpret the different life-cycle stages that household ceramics undergo. People abandoned their vessel after use or reuse. It is important to understand how to interpret different life -cycle stages in the archaeological record. Ethnographic study of pottery life-cycle may assist archaeologists in this regard which allow them to make more meaningful inference relating to vessel's function, activity area, abandonment, and formation process.

Vessel use, reuse and eventual discard have significant implications concerning how archaeologist interpret the function of different vessel types, subsistence, food processing, activity area, socio-economic status and the interaction between potters and consumers (Arthur 2000:129; D.Arnold 1995; P,J,Arnold 1991). According to some authors (Binford 1978; Schiffer 1983; Deal 1998), artifact clustering in archaeological sites may result from disposal behavior rather than representing an activity area Post abandonment dumping results in concentration of refuse along pathways or in household depression. In accordance to Deal and Hagstrum (1995), the reuse of a vessel may offer additional intriguing insights about how to interpret an ancient pottery assemblage.

According to some scholars (Binford 1968; Schiffer 1983; Deal 1998), artifact clustering in archaeological sites may result from disposal behavior rather than representing an activity area. Instead of near a cluster of houses, post-abandonment dumping causes waste to concentrate along walkways or in depressions around houses (Arthur 2000). According to Deal and Hagstrum (1995), the reuse of a vessel may offer additional intriguing insights about how to interpret an ancient pottery assemblage.

When an archaeologist works on ceramics relating to use-wear and residue analysis associated with reused vessel, he/she must consider these vessels are likely to reflect secondary rather than primary use. Pottery assemblage of the cremation place of Hindu people can give important information to archaeologists in Bangladesh. Most of the cremation center is located on the riverbank away from the locality and only one type of vessel (water pitcher) is used and eventually discarded there. Moreover, the pathways and courtyards, land around the potter house is imbedded with potsherds which is different reused and discard behavioral practice than non-potter communities which may identified from an archaeological site by careful observation.

4. Conclusion

In ancient times, pottery was the only used vessels and it had high demand which increased the potters' eagerness and specialization. On the other hand, industrial vessel types have taken the place of pottery and the socio-cultural, economic status of consumers has decreased the demand of pottery which is badly affecting this craft.

The switch from ceramic vessels to industrial containers among societies around the world has provided researchers an avenue to explore how technological change affects household material culture (Skibo 1992). This technological change from ceramic to industrial vessels is evident in this region also, both in the potter and non-potter communities. Both potter and non-potter families use industrial vessels for their everyday household purposes in this region. *Tawa* and *malsa* are also used by most of the consumers. Though *Mera pitha* is a popular food in this area, several households share a *poin* instead of buying one each.

The process of mending vessels is rare both in potter and non-potter households. The only type of vessel which is mended sometimes is *chari* (large basin) that is used for cattle-feeding. Ethno-archaeological research in this region did not find a strong association between pottery diversity and economic wealth. But a strong relation exists between the number of metal and modern industrial ceramic vessels with household economic wealth. Wealthier households have a higher frequency of vessels, more serving and food processing vessels than poorer households. It is noticed that religion affects the pottery use, for example metal vessels is frequently used by wealthier Hindu families, whereas high frequency of industrial modern ceramics vessel is used by wealthier Muslim families.

The study of pottery reuse and discard has shown that not all types of vessels are reused, only a few types of vessels are reused, i.e., *tawa, malsa.* Reuse and discarding pattern between potter and non-potter families is different also. Potter consumers reuse their ceramic vessel for household purposes less than non-potter consumers because they can replace vessels more often due to vessels availability in their house. Sometimes discarded, cracked or old pots of potter house is sold and reused for house construction purpose by non-potter consumers. In this context pots is reused after being discarded and then their reuse location and confirm abandonment location are generally the same. This understanding of pots prime use, reuse and discard practice may lead an archaeologist to make an inference about an archaeological site.

References

Ahmed, B. (2001). *Narshingdi Zellar Wari-Bateshwar: Akti Pratnatattik Shamikkha* (in Bengali). Dhaka: Writers Foundation.

Arnold, D. E. (1985). *Ceramic Theory and Cultural Process.* Cambridge: Cambridge University Press.

Arnold, P.J (2000), Working without a net: recent trends in ceramic Ethnoarchaeology, *Journal of Archeological Research*, Vol, 8(2): 105-133.

Arthur, J., W. (2000). *Ceramic Ethnoarchaeology Among The Gamo of Southwestern Ethiopia*, Unpublished Ph. D Thesis, University of Florida.

Binford,L.R.(1968),Methodological Considerations of the Archaeological use of Ethnographic Data.In LEE.R. B. and I. Devore (eds) *Man the Hunter*, Chicago: Aldine.

David, Nicholas, and Carol, Kramer, (2001). *Ethnoarchaeology in Action, Cambridge world archaeology series*. UK: Cambridge University Press.

Deal, M. and M.B. Hagstrum (1995). Ceramic Reuse Behavior Among The Maya and Wanka: Implications for Archaeology. In J.M. skibob, W. H. Walkar and A.E. Nielson(eds) *Expanding Archaeology* Salt Lake City: University of Utah Press.111-125.

Pena, J. T. (2007). *Roman pottery in the archaeological Record*. New York: Cambridge University Press.

Deal, M. (1998). *Pottery Ethnoarchaeology in the Central Maya Highlands*. USA: University of Utah Press.

Pena, J. T. (2007). *Roman pottery in the archaeological Record*. New York: Cambridge University Press.

Schiffer, M. (1983), Review of Cultural Materialism: The Struggle for a Science of Culture in M. Harris (Eds), *American Antiquity* 48(4):190-194.

Sarantakos, S. (1998), *Social Research*, London: Macmillan Press Ltd.

Skibo, J. M. (1992). *Pottery Function: A Use Alteration Perspective*. New York: Plenum Press.

Appendix

Plate 1 : Curd pot is reused for keeping ash.

Plate 2. a: Potsherds is reused in the basement area of a tube well to soak water.

Plate 2.b : Pre-fired broken pot being dried to place in the base of tube well.

Plate 3 : A Curd pot is being reused for planting seeds / as a tob.

Plate 4 : Broken pottery is reused to build wall of a house with mud.

Plate 5 : Broken or old pottery storage (at the corner of the courtyard) to reuse them as a saggar.

Plate 6: Potsherds on the road (reused & eventually discarded).

Plate 7 : Potsherds is seen on the excavated road

Plate 8 : Broken pottery is stored for sale.

Plate 9 : Pot is discarded at cremation place on the bank of the river.

Plate 10 : Hanging reused pot in the field to protect the field from bad omen.