

ETHNOARCHAEOLOGY IN THE PHILIPPINES

William A. Longacre

I define ethnoarchaeology as the study of variation in material culture and its relation to human behavior and organization among living peoples by archaeologists with the aim of strengthening archaeological inference. It is done by archaeologists who are trained to identify subtle variation in artifacts made of stone and bone, ceramics and other materials. It requires lengthy fieldwork and the collection of detailed quantitative data.

It is not a new subfield of archaeology as its roots lie in the later 19th century. In fact, it was an American archaeologist, Jesse W. Fewkes, who coined the term when he referred to himself as an ethnoarchaeologist (1900). During that time, there were many examples of such studies among the Pueblo peoples of the southwestern United States through the Bureau of American Ethnology at the U.S. National Museum in Washington. Much of this work focused on pottery and architecture and resulted in numerous, highly useful publications (e.g., Mindeleff 1891).

After the turn of the 20th century, ethnoarchaeological fieldwork just about ceased for some 50 years. In response to new currents in anthropology and archaeology, a return to such studies began in the 1950s and increased in the 1960s as a part of the New Archaeology. The longest running, longitudinal ethnoarchaeological project conducted so far was launched in 1973. That was the Kalinga Ethnoarchaeological Project initiated that year and continuing to the present time. That project and subsequent additional studies have put the Philippines on the ethnoarchaeological map as a major source for important contributions in the field.

Students all over the world know about the Kalinga and other groups here in the country as the results have been disseminated in various publications, dissertations, and theses. A number of dissertations have been completed on the Kalinga, for example, at both the University of Arizona in Tucson, and at the University of the Philippines, Diliman. Work with the Agta peoples of northern Luzon by Bion and Annie Griffin has produced numerous publications on these hunter-forager peoples. Additional fieldwork has been carried out by Mark Neupert and Gloria London in Gubat, Sorsogon, focused on a neighborhood of full time potters, Paridijon. And, a major ongoing study by Longacre has been present among full time potters in San Nicolas, Ilocos Norte.

What kinds of results have these projects produced that will be of interest and use to the archaeologist? One area of important contribution lies in formation process research. Basic data, such as records of pottery use-lives in ongoing societies, provides the basis for what has come to be called, "accumulations research" (Varien and

Mills 1997). Also, an understanding of subtle surface alterations reflecting use of pots has resulted in many insights to help archaeologists interpret prehistoric data. One example of this is the work by Skibo (1992) that explores residue analyses with pottery collected among the Kalinga for his doctoral dissertation. Residue analysis holds great promise for inferring what pots were used for.

Another area of important contributions to archaeological inference from ethnoarchaeology centers on the relationship between degree of standardization of particular products and the degree of specialization of the producers. If there is indeed a relationship, then prehistorians could look for the beginnings of standardized pottery, for example, as a correlate of the presence of craft specialists. Thus, early processes of state formation might be explored through ceramic standardization analyses. But, is there really a link between standardization and specialization?

Ethnoarchaeological research would seem to be the ideal approach to explore the degree of linkage. One might begin with a field investigation among people where each household made its own pots. The Kalinga are a good example of this mode of production. Examining the degree of standardization, in this case, metrical standardization, with a large sample of cooking pots reveals variation at about 12 percent. This provides a baseline to compare the pottery produced on a household basis to pottery made by more specialized producers, such as a group of craft specialists making pottery for a market.

Several other field sites in the Philippines have now been used to provide the degree of metrical variation in pottery produced by specialized producers. The neighborhood of Paridijon in the small city of Gubat, Sorsogon has around 70 potters working full time to provide thousands of cooking pots, flowerpots, and stoves per week. Measuring thousands of cooking pots from Paridijon reveals metrical variation hovering around 6 percent, roughly half that of Kalinga pottery.

Using these data, a study was conducted using prehistoric cooking pots from Grasshopper Pueblo, a 14th century prehistoric community in Arizona to assess the mode of production there. The Grasshopper pottery varied at 12 percent metricaly, suggesting that the household mode of production was in place in this village, indicating a lack of specialized producers (Longacre, Kvamme, and Kobayashi 1988).

Additional field sites have been explored that suggest that the link between specialization and standardization is not simply the unintended by-product of rote production as has been suggested, but rather is a deliberate attempt by specialized producers to make standardized products for their consumers. As a corollary of this, the older, more skilled potters make pots that are far more standardized than those made by beginner potters, even reaching an astounding three percent metrical range of variation (Longacre 1999).

Identifying general principles such as these that link variation in

material culture to specific aspects of human behavior and organization result in strengthening the power of archaeological interpretation. Ethno-archaeology is one source for the identification of such regularities; experimental archaeology is another. A combination of the two would seem to hold special promise as a source of such principles.

Exploring performance characteristics provides one example. The cooking pots produced by the craft specialists in a neighborhood of San Nicolas, a small city in Ilocos Norte Province in northwestern Luzon, are shiny and black in color. The potters explain that the black color makes their pots stand out and thus are easily found by customers in the market. This is an example of a visual performance characteristic. Consumers identify the pots from these potters as more durable than those from competing potters.

After the pots are formed and dried, the surface is covered with a red slip with a high iron content. The pots are then polished and then fired in a "bonfire" at about 750 degrees centigrade. When they are fired, they are removed from the fire and immersed in a pile of rice chaff and that produces a very smoky reducing atmosphere that turns the pots black. To test whether or not such surface treatments effect performance characteristics of the pots, a collection of pots was commissioned for a series of experiments in the lab. Pots that had neither slip nor blackening were collected as were pots that had only the red slipped exterior. Pots that were blackened but that had no slip as well as pots that were produced as the potters normally do were also collected.

Experiments were conducted on the collection at the University of Arizona in the Laboratory of Traditional Technology. Strength was measured using the three ball on one ball tester (Neupert 1994). Heating effectiveness was also measured by recording the length of time it took to bring an amount of distilled water to 90 degrees centigrade. These were critical performance characteristics in assessing the durability and cooking effectiveness of the pots in the sample.

The results indicate that the traditional blackened pots with the red slip are slightly stronger than the other variants and the heating effectiveness is much, much higher than the others as well. So, in addition to the visual performance characteristics of the black pots, they are also somewhat stronger (more durable) and cook more efficiently than pots with alternative surface treatments.

This approach, combining ethnoarchaeological and experimental studies, holds great promise for improving our understanding of decisions made by potters in the prehistoric past. It is a direction of study that can be profitably be applied to other forms of material culture as well. This would seem especially true for the study of stone tools.

Despite its obvious successes, traditional ethnoarchaeology seems doomed to eventually follow the horse-drawn buggy and the household potter into an artificial life in theme parks and historical enactments. Let's look again at the history of the Kalinga Ethnoarchaeological Project to date to see what lessons can be

learned.

Even when I first arrived in 1973 and found a potter in nearly every household in Dangtalan, Pasil, I also found children attending government –run schools, residents whose typical daily attire was industrially-produced clothing handed out by missionaries and farmers raising quantities of coffee as a "cash crop" for shipment to the lowlands. Ethnoarchaeology was drastically slowed by harsh contemporary realities when the Marcos government announced plans to build a dam on the Chico River to generate hydroelectric power and the local Kalinga people mounted a guerrilla offensive, joining the New People's Army in the area.

When Corazon Aquino terminated the Chico Dam plans as her first act in office, I returned to my primary study village, Dangtalan, in 1987. I found that government engineers had replaced the rickety bamboo trestle over the Pasil River with a steel and wood suspension bridge, that many of the younger villagers spoke English, and that the pottery making in the village had almost completely stopped. In the 1990s, a massive landslide dammed the river and created a lake, which the people stocked with Tilapia fish, originally from the Nile River in Egypt! The lake unfortunately silted up and is no more, so this addition to the available protein to the Kalinga is no longer there.

Traditional ethnoarchaeology continues to be done all over the world leading to new insights about the relationships between variability in material culture and the behaviors of the people responsible. This new work continues in the Philippines as well. Mark Neupert (1999, 2000) has recently completed a study of elite factionalism in a small city, Gubat, Sorsogon, and the attempts on the part of the elites to capture the allegiance of craft specialists. The subsequent split of the potters is reflected in the different clay sources utilized by each faction. Neupert employed neutron activation technology to identify trace minerals in the clays that enable him to spot emerging factions through the analysis of the clays used in the pots.

Margaret Beck has just completed months of fieldwork among the Kalinga in the village of Dalupa in the Pasil Valley. She was exploring formation processes in the development of middens in the village and the impact on potsherds buried in such an environment. The impact on pottery surfaces and on the residues originally present is one of her research interests. She will complete the analysis of her data and finish her dissertation in 2002, the latest in Kalinga doctoral projects by ethno-archaeologists.

Let me close with one additional example of the utility of data collected during the Kalinga Ethnoarchaeological Project. The data come from an agricultural society in the Philippines but are applied to questions about Japanese prehistory. Japanese archaeologists debate the date for the earliest appearance of domesticated rice, but all agree that the Yayoi Period (ca. 400 B.C. to ca. A.D. 500) is one of fully developed wet rice cultivation in Japan. Estimates of the early appearance of rice range from 500 B.C. to as much as 1000 B.C. in

the late Jomon Period.

Ethnoarchaeology helps to refine the estimate of early rice in Japan through the direct application of surface alteration studies among the Kalinga. Kobayashi (1994, 1996) found a distinctive pattern of interior carbon deposition in the rice cooking pots used by the Kalinga that allowed differentiation from cooking pots used to cook meat and vegetables. This is a fairly robust pattern of carbon layering on the vessel interiors that makes identification of rice cooking pots fairly easy.

Armed with this information, Dr. Kobayashi visited museums in Japan and examined whole cooking pots recovered from later Jomon and earliest Yayoi contexts. He spotted the distinctive carbon deposits on vessel interiors dating from the later Jomon period. This strengthens the inference that rice was first introduced to Japan in the first millennium B.C. , well before the onset of the Yayoi Period.

Although diminishing, the potential for ethnoarchaeological research remains high here in the Philippines. But we must encourage our students to undertake such fieldwork soon as opportunities are disappearing all the time. I would hope that my work and that of my students serve as an inspiration for such endeavors and I pledge to continue my own ethnoarchaeological research in the Philippines as long as I can.

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