

## Ceramics, Kinship, and Space: A Kalinga Example

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Kalinga household pottery inventory data are used to evaluate relationships between social and spatial relations. Two objectives guide the research discussed in this paper: (1) to examine assemblage variability in pottery-producing and pottery-consuming villages; and (2) to explore differences in ceramic patterning between households in two pottery-consuming villages. These disparities reflect separate sets of social relations that each pottery-consuming village has with the two pottery-producing villages. We discuss archaeological implications of our distributional analysis in our concluding comments. © 1992 Academic Press, Inc.

Ceramic studies that examine social relations and spatial proximity continue to be important to archaeological research. Here we trace a historic path from New Archaeology studies in the prehistoric American Southwest to Kalinga ethnoarchaeology in the northern Philippines to illuminate the intersection of social and spatial relations. Kalinga pottery moves from producers to consumers in ways quite different from those assumed by the New Archaeologists whose research brought Ceramic Sociology to the fore nearly three decades ago. We use data from the Kalinga Ethnoarchaeological Project to evaluate previous assumptions and to offer insights on sociological issues.

Efforts to reconstruct prehistoric social organization are routinely associated with the New Archaeology and what has come to be known as Ceramic Sociology (Plog 1978). Work done at prehistoric Southwestern sites such as Carter Ranch (e.g., Longacre 1970) outlined assumptions of the Ceramic Sociology in efforts to infer prehistoric residence behavior. Various critiques of this early research first surfaced in the late 1960s, and have continued to the present (see Plog 1978 and Skibo et al. 1989 for summaries of this research).

Probably no one today believes that prehistoric residence was truly identified during the early days of the New Archaeology. However, interest in reconstructing prehistoric social organization persists, as do unresolved questions regarding the nature of social relations and spatial proximity. It is in the spirit of continuing dialogue on prehistoric social organization that we conducted the research presented in this study.

## INTRODUCTION TO THE FIELD SETTING

One product of the early Ceramic Sociology studies was a significant increase in ethnoarchaeological research, including the commencement of the Kalinga Ethnoarchaeology Project in the rugged highlands of the northern Philippines. The Kalinga were considered appropriate for study as they were a "tribal" society of sedentary agriculturalists who made and used pottery on a household basis (Dozier 1966). Reconnaissance in the Pasil Municipality (Fig. 1) in 1973 (Longacre 1974) was followed by field research conducted during 1975–1976 (Longacre 1981), and again in 1987 and 1988. These field seasons produced the data used in this study, and all household inventory information was collected during the 1987–1988 season.

One of the primary goals of the 1975–1976 project was to test a model of stylistic micro-traditions reflecting learning frameworks that had originally been applied to Carter Ranch data (Longacre 1970). Household pottery inventories were also conducted in the villages of Dangtalan and Dalupa to launch a use-life study (Longacre 1985). The inventory includes the following information: vessel type, vessel size, name of producer, relationship between producer and consumer, production village, means of procurement (e.g., bartered, made by household potter, given as gift), and production date. Household pottery inventories were updated during the 1987–1988 field season.

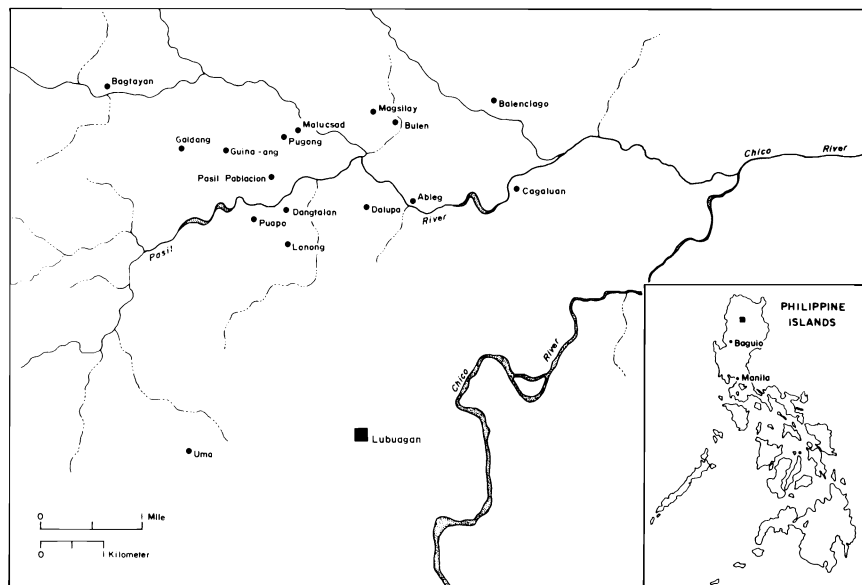


FIG. 1. The study area: the Pasil Municipality, northern Luzon, Philippines.

Although the inventories were initiated to investigate aspects of ceramic use-life, they also provide important data on ceramic production and distribution within and between Pasil villages. Graves' (1991) analysis of these inventories indicated that many Dangtalan pots were not made by the resident potter. Gift-giving and barter, the backbone of Kalinga social interaction (Takaki 1977), were major distribution mechanisms. The number of Dangtalan vessels produced for exchange rather than for household use doubled between 1976 and 1980 (Graves 1991:124) and the number of pottery-making households decreased. Observations during 1987 and 1988 confirmed earlier patterns: only 58.4% (31) of all Dangtalan households and 63.6% (42) of Dalupa households contained resident potters. By 1987, Dalupa potters had intensified pottery-making into a community specialization (Stark 1991). Barter, gift-giving, and some forms of specialized production were all overlooked by the early Ceramic Sociology models (see also Plog 1989).

Inventory data were collected from five villages during the 1987–1988 field season to identify distinguishing material correlates for production as opposed to receiving centers. The pottery-making communities of Dangtalan and Dalupa were included in the study, as were three pottery-consuming villages in Pasil: Guina-ang, Malucsad, and Cogaluan. These villages were selected because they lie in either direction of the pottery-making communities and are actively involved in the Pasil pottery exchange network. Cogaluan is the easternmost community in the Pasil Municipality. Guina-ang is the largest pottery-consuming community that lies west of the production sources and the most frequently visited village by Pasil potters in that general area. Malucsad is another large village in that area and was chosen for inventory to investigate differences in patterning between the nearby communities of Guina-ang and Malucsad.

Two selection criteria were used to eliminate some household assemblages from analysis: (1) those houses with assemblages containing fewer than five vessels were omitted from consideration to reduce problems associated with small sample size; and (2) those houses whose assemblages contained a large proportion (>10%) of vessels of unknown provenience, or a large proportion of non-Dalupa/Dangtalan origin, were excluded to reduce the noise in the patterning. For the five villages, 282 of 342 houses, and a total of 4635 vessels, were included. Summary data are provided in Table 1.

Ceramic vessels from all functional categories were inventoried in each household: these categories include rice cooking pots, meat/vegetable cooking pots, and water jars (see Longacre 1981 for a description of functional categories). Kalinga household inventories now include metal rice cooking pots and metal frying pans. These nonceramic containers were excluded in the present study, which focuses on ceramic production

TABLE 1  
BASIC SAMPLING DATA

Village	n HHS in sample	% Total HHS inventoried	n pots in sample	% Total pots inventoried
Dangtalan	53	84.1%	903	88.5%
Dalupa	66	88.2%	1099	93.5%
Guina-ang	85	84.2%	1269	83.5%
Malucsad	60	90.9%	1050	92.8%
Cagaluan	18	58.1%	314	62.4%
Totals	282	82.5%	4635	83.6%

and consumption patterns. The mean number of ceramic pots per sampled household ranged from 15.0 (Guina-ang) to 18 (Malucsad); the remaining three villages (Dangtalan, Dalupa and Cagaluan) averaged 17 pots per household. Comparison of averages from sampled households and the total households inventoried for each indicates at most 3 to 4% higher mean number of pots per household in the sample than in the population of households.

#### POTTERY-MAKING VS POTTERY-CONSUMING VILLAGES

In the Ceramic Sociology work of the 1960s, it was assumed that all households were self-sufficient (e.g., Cordell 1991; Plog 1989). The Kalinga data are intriguing in this respect, since the organization of Kalinga pottery production was initially described as household-based. In both pottery-producing villages of Dangtalan and Dalupa, at least half of all pots recorded were not made by resident potters. In Dangtalan, 59.2% of the vessels were produced by individuals other than the household potter; in Dalupa 45.7% of all pots recorded were not made by the household potter. Neither the households in Dangtalan nor in Dalupa fit the self-sufficiency model assumed by the Ceramic Sociologists of the 1960s.

Having dismissed the household-based model of production, we used Kalinga data to explore material correlates of pottery-making versus pottery-consuming communities. We wished to test Graves's hypothesis (1991:136f.) regarding the number of potters represented in a given household. We are examining one aspect of diversity as discussed in recent articles (e.g., Kintigh 1989; Rice 1989) and referred to as "richness". Measures of "evenness" are currently under investigation, but are not discussed here. Since most of the vessels in each pottery-making household would be manufactured by a household potter, Graves suggested that household pottery inventories in pottery-making communities should exhibit a low degree of ceramic variability with respect to the number of

producers represented in a given household. Conversely, households in a pottery-consuming settlement should be characterized by diverse ceramic assemblages that contain a high diversity (or a higher richness) of producers.

To compare household pottery assemblages from pottery-making and pottery-consuming villages, we used measures of richness at the household and community levels (*sensu* Kintigh 1989; Rice 1989) that are presented in Table 2. We first examined the mean number of producers for households in each of the five villages. We then standardized household data by calculating the ratio of potters represented in a given household relative to the number of vessels represented for a "Potter Diversity Ratio." This approach standardizes frequencies across households with differing numbers of pots. Higher values indicate richer (or more diverse) assemblages while lower values should reflect less diverse assemblages than one might expect when household potters are active. We then aggregated household data to compare households in pottery-producing villages and households in pottery-consuming villages.

Dangtalan and Dalupa produce nearly equivalent figures with respect to both variables examined. The pottery-consuming villages (Guina-ang, Malucsad, and Cagaluan) have a slightly higher mean for potters, and their mean richness estimates are 1.4 times higher than richness estimates from the pottery-making villages. Households in pottery-consuming villages have higher mean richness values than do households in pottery-making villages since they are dependent upon others to supply their pots. These differences are clearest when pottery-making and pottery-consuming households, rather than villages, are compared. Pottery-producing households have half the mean number of potters represented and similarly lowered richness values. At the community level, the three pottery-consuming villages have higher mean diversity ratios than do the

TABLE 2  
MEAN NUMBER OF POTTERS REPRESENTED PER HOUSEHOLD AND MEAN HOUSEHOLD RICHNESS: BY VILLAGE

	Mean no. potters/household	Mean richness
Dangtalan ( <i>n</i> = 53)	5	0.36
Dalupa ( <i>n</i> = 66)	5	0.35
Guina-ang ( <i>n</i> = 85)	7	0.51
Malucsad ( <i>n</i> = 60)	8	0.48
Cagaluan ( <i>n</i> = 18)	7	0.49
Pottery-making		
households ( <i>n</i> = 69)	3	0.25
Pottery-consuming		
households ( <i>n</i> = 213)	7	0.50

pottery-making villages. We suggest that similar measures of richness that focus on the number of producers (or sources) represented can be used on archaeological ceramic assemblages.

#### CERAMIC PATTERNING IN TWO POTTERY-CONSUMING VILLAGES

In addition to significant differences in the diversity of households assemblages from pottery-making and pottery-consuming villages, variability also exists in spatial patterning found in the two pottery-consuming villages of Guina-ang and Malucsad. At the household and community levels, Dangtalan pots dominate Guina-ang assemblages while Dalupa pots dominate Malucsad assemblages. This disparity in preference between pottery-consuming villages is interesting because Dalupa potters are more active than are Dangtalan potters and their pots are more widely distributed in the five Pasil villages under study. Within the combined data base, approximately 55% (157) of all sampled households ( $n = 282$ ) contain 50% or more Dalupa-made pots. In addition, Dalupa-produced pots still represent 55.8% (2587) of all pots recorded, irrespective of household. All things being equal, Dalupa pots should dominate pottery-consuming village assemblages at the household and community levels. Why, then, do differences exist in the patterning between Guina-ang and Malucsad? We consider both spatial and social factors that explain differences in the patterning that we identified.

To examine spatial patterning, we identified the dominance of production source (i.e., Dangtalan or Dalupa) in all Guina-ang and Malucsad household assemblages. A household was considered Dangtalan-dominant when 50% or more of the assemblage came from Dangtalan potters; the household was Dalupa-dominant when the same proportion derived from Dalupa potters. When assemblages were evenly split, the household was considered a Dangtalan-Dalupa tie. The results of this household-based analysis were plotted for each village. Figure 2 presents spatial patterning for Guina-ang, where most household assemblages are dominated by Dangtalan potters. A few clusters of Dalupa-dominant houses likely reflect established relationships between producers and consumers; in only one case is a kin connection present. In Fig. 3, patterning in Malucsad households presents the antithesis of Guina-ang. Most sampled households are Dalupa-dominated. The higher proportion of the non-Dalupa households that are evenly split between two production villages further indicates the importance of Dalupa as a production source.

We first consider distance as a factor in explaining differences in patterning between the two pottery-consuming villages. Both Guina-ang and Malucsad are located across the Pasil River from the pottery-making villages. Two routes connect Dangtalan and Dalupa to the consuming

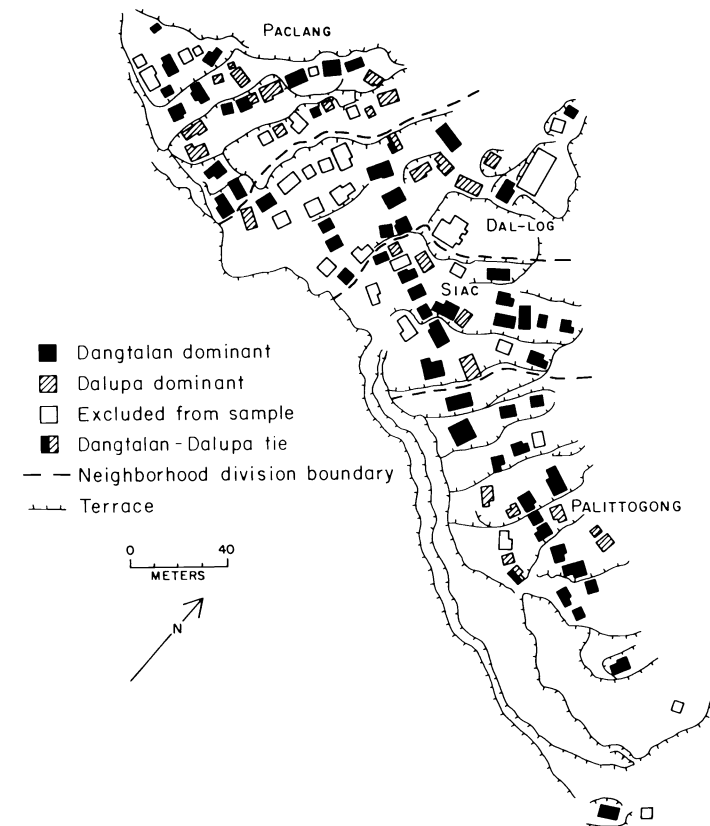


FIG. 2. Dominance of ceramic production sources in Guina-ang households.

villages; potters from the two villages generally take two separate routes. From Dangtalan, one reaches both Guina-ang and Malucsad via Pasil Poblacion (the municipal seat); both villages are roughly equidistant (ca. 2–3 km) and lie northwest and northeast of the pottery-making village. Dalupa potters can reach Malucsad in less than an hour (ca. 3 km distance). Guina-ang is reached via Malucsad and lies 1–2 km farther on the trail. That this difference in distance does not deter Dalupa potters is evidenced in their regular bartering visits to Bagtayan, which lies 4 km (and more than an hour's hike) farther northwest. Spatial factors are neutralized for Dangtalan potters, since the two pottery-consuming villages lie at similar distances. But spatial factors cannot explain why Dalupa potters include the Bagtayan/Galdang/Guina-ang villages within their regular exchange sphere.

Social relations, rather than spatial proximity, explain much of the

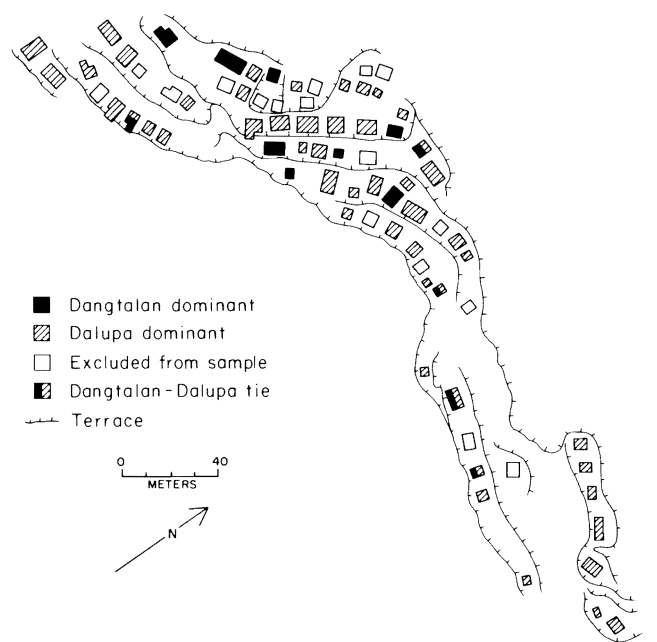


FIG. 3. Dominance of ceramic production sources in Malucsad households.

ceramic patterning presented in Figs. 2 and 3. To begin with, Pasil Kalinga divide their river valley into Upper and Lower Pasil. Dangtalan and Dalupa straddle this boundary, with Dangtalan part of Upper Pasil and Dalupa part of Lower Pasil. These divisions have some basis in kin ties; Guina-ang is considered the oldest Pasil village and is seen as the "mother" village for all communities that surround it, including Dangtalan (Galdang, Bagtayan, Malucsad, Pugong are the other "daughter" communities). Peace pacts are often made between the Guina-ang "region," which encompasses all "daughter" communities, and other areas (Dozier 1966).

For Pasil Kalinga, these upper Pasil/Lower Pasil affiliations are the ties that bind. Kinship is first reckoned to a bilateral kin group, then to one's village, and finally to one's peace pact holding unit or region. Evidence of these loyalties comes from a mayoral campaign during the 1987–1988 field season. Two mayoral candidates, one from Guina-ang and one from Dalupa, campaigned throughout the Municipality. However, the clear intent was to garner support at the village level. The Guina-ang candidate obtained support throughout Upper Pasil and won the election, and most Dangtalan residents voted for the Guina-ang candidate. Kin ties and ties through marriage are common between Dangtalan and Guina-ang: 72% of

Guina-ang pots exchanged through direct kin networks involved Dangtalan potters.

Patterns of social affiliation between producing and consuming communities are reflected in patterns of material consumption. During the household inventory process, all Guina-ang households were polled regarding their preferences for pottery-making village. The majority of Guina-ang residents preferred Dangtalan cooking pots over those of Dalupa (Aronson et al. 1991), citing a variety of reasons. Dalupa pots are more abundant and therefore more available; however, Guina-ang residents prefer Dangtalan vessels for what can only be considered social factors.

Affiliated with Lower Pasil, Dalupa potters monopolize all communities within this area. Peace pacts involving Dalupa are commonly held with Ableg, and close kin ties exist between Dalupa and the other Lower Pasil communities. About 88% of all pots recorded in Cagaluan, for example, were manufactured in Dalupa. Almost half (154/314) of those vessels were bartered between producers and consumers who have direct kin ties; 91.5% of those kin exchanges involved Dalupa potters. Two Dalupa potters dominate the sampled Cagaluan assemblages, producing over half (107) of the Dalupa-made pots that were identifiable to producer ( $n = 206$ ). For one of these potters, 75% of all her bartered pots in Cagaluan went to distant relatives. Another potter who married into (and divorced out of) Cagaluan also has extensive kin connections, and 68% of vessels she exchanged in that community went to individuals with direct kin ties. Similar patterning would likely appear in other Lower Pasil communities.

#### SOUTHWESTERN ARCHAEOLOGY IN ETHNOARCHAEOLOGICAL PERSPECTIVE

Now, we return to the past—both recent and ancient—to consider the archaeological implications of our ethnoarchaeological analysis. Traditionally, Southwestern archaeologists envisioned late prehistoric communities as economically and politically autonomous (see Cordell 1991; Kidder 1936; Plog 1989 for discussions). Debates regarding the organization of prehistoric ceramic production in the Southwest began as early as the 1930s (e.g., Shepard 1936:581) but suggestions of nonhousehold-based production were never fully accepted by Kidder (1936:xxiii) and others (e.g., Judd 1954:235). As the Carter Ranch Site was being excavated 30 years ago, it did not occur to those of us involved that anything other than a household mode of production might have operated (Longacre 1964). We certainly assumed that virtually all pots that were recovered in each house exposed at the site were made by the household's resident potters.

How would our sociological questions have shifted had we turned the

analytic tables on Carter Ranch to view it as a pottery-consuming, rather than a pottery-producing village? Consider, for example, if the Carter Ranch Site were a cognate to the Kalinga village of Guina-ang. The range of possible "patterns" that could be identified using ceramic data would clearly not relate to Ceramic Sociology models of postmarital residence behavior at the site. It now seems far more reasonable to anticipate the possibility that some form of village-based specialization was operative in the late prehistoric Southwest, and that differences in distributional patterning may reflect patterns of group affiliation. The indices offered here suggest means of distinguishing between pottery-consuming communities and pottery-producing communities in the archaeological record, even in the absence of clear material evidence of on-site ceramic production. Characterization studies, coupled with design analysis, have begun to identify "ceramic analytic groups" (Bishop et al. 1988), and these groups could be evaluated using measures of diversity described in this study.

Were archaeologists to identify compositional groups, what does the Kalinga example suggest regarding the nature of relationships between pottery-producers and pottery-consumers? First, one could assume that social factors, along with considerations of distance, contributed to the observed patterning. Through ethnoarchaeological research we are afforded the luxury of precision with respect to identifying kin links. Social relations in the archaeological record need not be restricted to nuclear family relationships. Kinship, as sets of social linkages, channels the exchange of ceramics and other goods among Kalinga villages and likely did so in the prehistoric Southwest as well.

### CONCLUSIONS

Our analysis has examined relationships between ceramics and social proximity from archaeological and ethnoarchaeological vantage points. We have attempted to embed these concepts in the broader historical framework in which they developed, and to illustrate how ethnoarchaeological research contributes to research in this domain. We have introduced ethnoarchaeologically derived measures that may be applicable to archaeological ceramics as our techniques for identifying production sources improve. Certainly, these methods require substantial testing and refinement using additional, well-documented ethnographic cases prior to successful archaeological application. Ethnoarchaeological research holds great potential for producing needed insights for model building and archaeological interpretation.

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