

outlawed and its authors punished. Regrettably, not one of the authors of this comment responded to my suggestion to join me in this action. They are leading another fight, probably with another purpose. Are there any “colleagues abroad” interested in how things will turn out this time with Russian anthropologists against hate speech?

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## On Hirth’s “Distributional Approach”

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Hirth’s (CA 39:451–76) new method for the identification of market exchange holds great promise for archaeology. Before its potential can be realized, however, it should be tested and refined. The Xochicalco case study is interesting and convincing, but it is not a test of the model, since we do not have independent evidence for the presence or absence of a market system there. A rigorous test would involve quantitative analyses of domestic inventories from ancient societies where we know markets were important (e.g., the Aztec, Roman, or Greek cases) and analyses of cases in which markets were not important (e.g., the Inca or Egyptians). When such tests are carried out, it will become clear that the composition of domestic artifact inventories is determined by a number of factors in addition to marketing behavior. As several commentators point out, wealth is one such factor. The effects of household wealth on artifact inventories are well established empirically (Smith 1987), but the interactions of wealth and marketing in generating domestic inventories remain to be studied.

In this comment I wish to contribute to the testing

and refinement of Hirth’s model by presenting some results of my excavations of Aztec houses in the Mexican state of Morelos. The modeling of domestic artifact inventories has been a major theme in this research, and I consider Hirth’s model an important addition to our analytical tool kit. The prevalence and importance of markets and marketing behavior in the highly commercialized Aztec economy are well documented with ethnohistoric data (Berdan 1985; Smith 1996:114–33), making this a good test case for the model. In Morelos specifically, documentary records indicate the existence of markets in Aztec settlements of all levels, from major political capitals through small villages (Smith 1994). Other evidence for market exchange consists of the high frequencies of imported goods at all known sites and the great diversity of places of origin of these imports (Smith n.d.: chap. 16).

The archaeological data come from well-dated middens associated with residential structures. The excavations at Capilco (a village) and Cuexcomate (a town) are published in Smith (1992); some preliminary results of the artifact data are presented in Smith and Heath-Smith (1994). The more recent excavations at Yau-tepec (a city) are discussed in Smith, Heath-Smith, and Cascio (1999) and Smith (1996). Extensive quantitative analyses of the domestic inventories from all three sites are now in progress and will be presented in Jan Olson’s dissertation at the University at Albany. For present purposes, I will limit discussion to the Early Cuahnahuac phase (A.D. 1350–1440) at Cuexcomate and Capilco, a period immediately before this area was conquered by the Aztec empire. Commoner houses at these sites were small, ground-level structures approximately 20 m<sup>2</sup> in area. One complex compound at Cuexcomate, group 6, is interpreted as an elite residence because of its large size (over 500 m<sup>2</sup>), the quality of its architecture, and its conformance to the standard plan of Aztec palaces.

In contrast to the Xochicalco case presented by Hirth, at these sites there are clear differences between elite and commoner domestic assemblages. Nevertheless, aspects of the household distribution data support a modified version of Hirth’s model of the influence of marketing on domestic assemblages, among them the patterns of occurrence of selected ceramic categories (table 1). Comparative data and theoretical models suggest that high-value imported goods and serving ware (particularly decorated varieties) generally show positive associations with household wealth levels (Smith 1987). Some of the ceramic categories fit this expectation (e.g., total bowls, Aztec III, polished red bowls, Basin of Mexico imports), whereas other categories show a divergent pattern not easily explained (e.g., local polychromes, drinking vessels). Using statistical techniques (e.g., discriminant function analysis and analysis of variance) it is possible to distinguish between elite and commoner residences on the basis of their ceramic type quantities alone. Nevertheless, none of the ceramic types show an exclusive association with elite residences.

The lack of exclusive elite associations, which to my mind is the clearest effect of marketing on household

TABLE 1  
Mean Frequencies of Selected Ceramic Types by  
Social Class (Percent of Total Ceramic Vessels)

Ceramic Category	Commoner Houses <sup>a</sup>		Elite Houses <sup>b</sup>
	Capilco	Cuexcomate	
Jars	23.9	17.0	19.7
Tortilla griddles	13.0	15.0	9.7
Total bowls	46.7	38.4	50.1
Plain bowls	4.7	10.9	9.8
Local polychromes	15.6	10.2	8.9
Aztec III (imported)	.8	2.6	5.3
Polished red bowls	4.5	5.5	12.9
Drinking vessels	1.7	4.9	2.8
Imported ceramics			
Basin of Mexico	5.4	9.1	10.7
Morelos	3.1	.3	3.0
Other areas	.4	.3	.9

<sup>a</sup> Numbers of houses: Capilco, 5; Cuexcomate, 3.

<sup>b</sup> Number of houses: 4.

assemblages, is even more striking when we consider the most valuable imported goods at these sites (table 2). Exotic stone beads used for jewelry, including jadeite, other greenstone, and rock crystal, were not recovered at the elite compound at all. The bronze objects from these sites were imported, almost certainly from Tarascan territory in Michoacan or Jalisco in western Mexico (Hosler 1994, Hosler and Macfarlane 1996). Small bells and tweezers of bronze were elite objects in Tarascan society (Pollard 1987), and they have been found in elite or ceremonial caches at the Aztec capital Tenochtitlan. Given these facts, it would not be surprising if such items had an exclusive elite association, which might point to ceremonial gift exchange or some other nonmarket distribution mechanism. Nevertheless, these bronze objects were recovered at both elite and commoner houses, suggesting that they were instead obtained through the markets. Comparable data

TABLE 2  
Numbers of Houses with Rare Imported Artifacts  
(Presence/Absence)

Artifact Category	Commoner Houses <sup>a</sup>		Elite Houses <sup>b</sup>
	Capilco	Cuexcomate	
Stone beads	3	0	0
Bronze needles	3	1	0
Bronze bells/tweezers	1	0	1

<sup>a</sup> Numbers of houses: Capilco, 5; Cuexcomate, 3.

<sup>b</sup> Number of houses: 4.

from the Yautepec project (the subject of ongoing analysis) show nearly identical household distribution patterns for exotic stone beads and bronze needles, bells, and tweezers.

These data from Aztec houses in Morelos provide strong support for the notion that marketing had a discernible influence on the composition of household artifact assemblages. Although elites had greater quantities of certain kinds of goods, they did not have exclusive access to any of the artifact categories recovered in excavations. Even the most exotic imports (bronze bells and tweezers), with high value in both energetic and symbolic dimensions, were regularly found in commoner middens. The most parsimonious explanation for this, given the independent evidence for the prevalence of markets in Aztec-period Morelos, is that commoners were able to purchase exotic jewelry and other valuable imported items in the markets. This finding goes against Hirth's specific hypothesis ("if non-market forms of distribution were important at Xochicalco, imported ceramics would be differentially distributed between elite and ordinary houses" [p. 459]). Nevertheless, these data confirm a modified form of his model in which markets make a wide variety of commodities available to all kinds of people but do not necessarily have a homogenizing effect on elite and commoner inventories. When the model is tested and applied more widely, I suspect that distributions of the type documented at Xochicalco—where elite and commoner inventories are nearly identical in a state-level society—will be the exception rather than the rule.

Hirth has proposed an exciting new approach to the archaeological study of economics and social organization. I believe that after additional testing and refinement his model will become a standard part of the archaeological tool kit for household-level analysis. In the continuing quantitative analyses of the Aztec household data from Morelos, my students and I will employ Hirth's model as we try to sort out the diverse forces that influenced household conditions and activities in this area. I urge Hirth and others to keep working on this approach, which has the potential to advance our understanding of ancient economies.

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