Kate Blankenship

Technology and Production in Archaeology

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While last week’s readings surveyed questions related to the connections between craft specialization and political and social complexity, the readings for this week narrow the scope by examining the organization of craft production itself. As a social activity, craft production encompasses a huge variety of possible manifestations across time and cultural boundaries. Many scholars have attempted to outline criteria with which to describe, assess, and analyze these different examples in a coherent, consistent and widely applicable manner. Although generalized analytical categories have been proposed and utilized by archaeologists studying craft production, each individual case introduces unique characteristics and challenges that can require innovative applications of these pre-defined frameworks for understanding ancient production activities.

The model most often cited and applied by scholars approaching the problem of craft production is proposed by Cathy Lynne Costin in her article “Craft Specialization: Issues in Defining, Documenting and Explaining the Organization of Production.” She outlines four basic parameters for assessing the problem archaeologically: context (refers to the type of social control exercised over production), concentration (refers to the geographic density and spatial interaction of the producers), scale (refers to the number and type of individuals involved in production) and intensity (refers to how much time is devoted to production by each individual); she then combines these parameters into a typology of craft production incorporating eight categories: individual specialization, dispersed workshop, community specialization, nucleated workshops, dispersed corvee, individual retainers, nucleated corvee and retainer workshops. Although Costin’s typology does cover a variety of possible production scenarios, it is her fundamental analytical parameters that are both generalized and mutually distinct enough to be applied broadly.

Carla Sinopoli states as much in her article “Specialized craft production: archaeological approaches,” but also introduces a number of complicating factors to the equation. Sinopoli cautions that the hierarchical nature of Costin’s and other scholar’s typologies can be interpreted to imply an “evolutionary trajectory” of different models of craft production. She stresses that there is not a direct correlation between high political complexity and a certain type of production, and that a wide variety of production set-ups can exist side by side within a single political situation. She also focuses on the producers themselves as complex social actors, whose identities as craft specialists can shift and develop over the course of their lifetimes, and whose choices and beliefs can have a direct impact on the manufacturing process. Overall, Sinopoli proposes a diachronic and dynamic approach to understanding ancient craft production, while still stressing the utility of the methodology proposed by Costin.

Shafer and Hester’s article “Lithic Craft Specialization and Product

Distribution at the Maya Site of Colha, Belize” uses a number of Costin’s parameters to analyze the production of stone tools over an extended time span at a single site. The scale and concentration of the lithic production are the central focus of their research, as Colha represents one of the densest and most extensive examples of lithic production in the New World. Using these criteria, they calculate how many stone tools were produced at the site per year, as well as the number of specialists required to produce that number. They also trace the distribution of these tools throughout the region by observing both the lithic form and the chert type of stone implements found at sites outside of Colha, and determine that Colha was the dominant producer of lithic tools for exchange in the region throughout both the Late Preclassic and Late Classic Periods, with non-utilitarian (ie, ritual) lithic forms having the widest distribution. Although little direct evidence exists for determining the type of social control (or context in Costin’s typology) over Colha lithic production, the authors suggest that the regional political and economic hierarchies in place by the Late Preclassic likely exerted general control over the craft production activities in the region, but that individual craftspeople may have determined the type and amount of tools they manufactured.

Wesley Bernardini’s article “Kiln Firing Groups: Household Economic

Collaboration and Social Organization in the Northern American Southwest” focuses mainly on the scale parameter as outlined by Costin, but extrapolates several broader social conclusions from its scale-based data. Bernardini’s data set includes a number of trench kilns of varying sizes in the Mesa Verde region, as well as their locations in relation to residential sites. Using this data he attempts to draw conclusions not only about the firing stage of ceramic production in the region, but also how the size and location of the kilns reflect community organization and household interaction and cooperation. The author proposes three main conclusions based on his data. Firstly, that the firing of ceramic vessels took place on a much greater scale than the formation of the vessels themselves, which was usually carried out at the household level; this implies variation not only between methods of production, but within a single method. Secondly, that the size of the smaller communal kilns does not vary between sites containing a single multi-family roomblock and villages containing multiple roomblocks, implying that the social organization of small scale production was not significantly impacted by shifts in the level of population aggregation. Thirdly, that the size of the larger firing kilns indicates a very high level of organization and collaboration during certain production events, perhaps indicating the manufacture of surplus for exchange.

Both of the articles discussed above effectively use the criteria proposed by Costin to examine and analyze specific examples of ancient craft production. While Schafer and Hester use their data to examine issues such as levels of production per site and time period, social control over production activities, and extent and density of exchange, Bernardini focuses more intently on the process of craft production itself and the variation that can be observed even within a single tradition of production. Though they use the methodological approach

introduced by Costin, both articles also seem to take heed of the cautions that are issued by Sinopoli. Neither article falls into the trap of framing the production activities they examine as part of a unidirectional, evolutionary process of technological development, nor do they associate the type of production directly with a political or social system. Each also takes into account that producers are actors whose identities and social relationships effect the ways in which their crafting activities are structured, adding a human element to these studies of ancient craft production.