Artisans Rule

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Product Standardization and Craft Specialization in Prehistoric Society

Edited by

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PREFACE

The idea for this volume originated in 2014 during the 20th Annual Meeting of European Association of Archaeologists in Istanbul. The session entitled "Artisans Rule: Product Standardization and Craft Specialization in Prehistoric Society" was organized by the editors of this volume. The idea of the session was to gather scholars researching different kinds of craft products originating from various geographical areas and belonging to various periods, considered from a variety of theoretical perspectives, including ethnoarchaeological and experimental research. The aim was to explore factors affecting craft production, and interrelations between product standardization and craft specialization in different social settings. We are grateful to all participants in the original session, in particular to authors who contributed to this book (Valentine Roux, Felix Adrian Tencariu, Selena Vitezović, Daniel Albero Santacreu, Aixa Vidal, Valentina Copat, Staša Babić and Jöelle Rolland), as well as Vera Bogosavljević-Petrović, and especially Timothy Earle, for the introduction.

This volume consists of papers focused on different kinds of craft products (pottery, bone and stone tools, and glass objects), and the problems of organization of craft production and division of labor, as well as the position of craftsmen in hierarchical societies. The articles based on ethnoarchaeological and experimental approach additionally contribute to the understanding of these issues in the archaeological record.

In order to create a volume of high scientific quality, each of the conference papers was expanded and reviewed by two anonymous reviewers. We wish to thank all of the scholars who made an effort to read the articles and give their opinions and comments. We are especially grateful to Cambridge Scholars Publishing for their interest in the Istanbul session, and for the patience and assistance during the process of editing the volume.

INTRODUCTION: ARTISANS, TECHNOLOGIES, AND CONSUMERS— A POLITICAL ECONOMY APPROACH TO CRAFT SPECIALIZATION

TIMOTHY EARLE

Artisans Rule: Production and Craft Specialization in Prehistoric Society offers an array of case studies, which investigate how craft production was embedded in the social contexts of traditional, non-industrial societies. These chapters were originally presented in a session during the 20th Annual Meeting of European Association of Archaeologists in Istanbul (2014), and appropriately, with the exception one ethnoarchaeological study in South Asia (Roux and Karasik), all chapters deal with European crafts. Emphasis is on pyrotechnic industries, especially ceramics. What I want to do is to position these studies within the broader approaches of economic anthropology.

Costin defines specialization as "a differentiated, regularized, permanent, and perhaps institutionalized production system in which producers depend on extra-household exchange…" (1991: 3). Artisans (craft specialists) produce objects, like textiles, lithics, ceramics or metal tools, for exchange to others. Artisans are never self-sufficient families; they produce explicitly to obtain things in exchange that they need and desire. A traditional economy is structured by patterns of production and exchange, in which roles of specialists play central roles.

As a topic, artisans are ideally suited for archaeologists, because artisan production is fundamentally material in the objects themselves, the steps associated with their special tools and debris, and patterns of distribution of their finished objects (Costin 1991). The primary contribution of *Artisans* is its considerations of methodological possibilities and problems studying specialization archaeologically, based largely on finished objects. Several authors focus on how to identify

specialization by the coefficients of variation that measure degrees of product standardization (Roux and Karasik; Vitezović; Bogosavljević Petrović; and Vuković and Miloglav). Standardization is a reasonable approach to identify artisan specialization because it offers a way to understand the scope of production and the routinization of skills. As well discussed by various authors, however, standardization also reflects cultural and political factors, such that a direct correspondence between standardization and specialization cannot be made. Vitezović introduces the useful concept of a continuum of quality as used by Choyke (1997) to study variability within an industry to measure elements of specialization.

First a disclaimer. I am a processual archaeologist, focused on the evolution of politically centralized societies (Earle 1997). This focus has centrally concerned me with the political economy as understood especially by Karl Marx and his followers. I consider myself to be a non-doctrinaire Marxist, meaning that I look at how variable control in the political economy structured power relationships in societies (Earle and Spriggs 2015; Earle 2017). My goal is to generalize a political economy approach to investigate the *longue durée* of prehistoric social change. Because Marx focused on productive relationships as the material foundation of social relationships and power inequalities, prehistoric concern for variation and development in artisan production is principally significant (Brumfiel and Earle 1987). My focus on the political economy is **not** because I think that it offers the only means to understand craft specialization, but because it provides a rich context to understand its systematic variation as linked to political power. Several authors in *Artisans* recognize at least tacitly that prehistorians' interest in craft specialization reflects its purported significance in social evolution (Vitezović; Rolland). The research question that keeps specialization on the prehistorians' front burner is whether the division of labor in crafting effected and was affected by social hierarchies. This topic is central to Marxist (political economy) theory, as introduced to prehistory by Gordon Childe (1942) and carried on by subsequent archaeologists (Costin 1991; Wailes 1996; Costin and Wright 1998). Several volume contributors appear to be critical of evolutionary theory as linked to specialization, and the political economy seems almost like a phantom haunting this book.

I found most of the chapters in *Artisans* to be 'theory lite.' This does not mean that they are without theory, but rather that their use of theory is implicit and tentative. I try here to provide theoretical framing to put their case material within broader intellectual perspectives. As spelled out by Babić, "it has become customary to regard the disciplinary field of archaeology as divided into three distinct approaches: culture-historical,

processual, and post-processual, each with its own set of theoretical premises". The contributors to this book mostly present creative post-processual approaches to artisans, de-emphasizing concerns of social evolution and cross-cultural comparison. As stressed by Babić, however, a real desire exists in contemporary archaeology to go beyond theoretical 'tribalism.' I strongly support this position. By and large, debates between these approaches have been talking past each other, and, I believe, a realistic synthesis can emerge by carefully understanding case material from multiple perspectives.

Specialization is not a single condition of production but represents a widely varying phenomenon (Costin 1991). Its nature and place in traditional societies thus make it an exciting variable for prehistorians to consider. Economic anthropology is a long-standing anthropological field, in which especially American archaeologists have long been active, and specialization is a key topic in their work. A brief over the review of the history of economic anthropology may help understand how theories can be used to study specialization in prehistory. Although tensions have long existed between three theoretical approaches in economic anthropology-substantivism, formal economics, and political economy, they offer complementary approaches to understand the multi-dimensional character of economic and social relationships (Earle 1985; Brumfiel and Earle 1987).

A substantivist perspective on artisans

Substantivism is the most completely anthropological of the three approaches in economic anthropology. Reacting to increasing use of microeconomic theory to understand traditional economies, Karl Polanyi (1957) articulated what he called substantivism, which puts social structure (the institutional arrangements of social groups) as central to his analysis. He drew a sharp division between modern, capitalist-dominated, market economies, for which microeconomic theories are appropriate and traditional societies, where economies were deeply embedded in social structures. Substantivism saw traditional economies as organized to meet a group's needs and desires for material things (substances). Such economies were thus viewed as constituted by flows of labor and materials. Substantivism emerged theoretically from French (Durkheim and Mauss) and British (Malinowski and Radcliffe-Brown) Structural Functionalism. From this theoretical stance, human norms and institutions had particular functions to maintain the whole society, on which all depended. Specialized production and the exchange of special products

engaged ways that people organize themselves. Its emphasis is cultural, and so it is highly relativistic, empirical, and descriptive. A critique of substantivism, however, has focused on its poor formulation of the role of the agency; social members often seem irrelevant, as social institutions functioned to maintain the whole. As substantivism became incorporated into post-processual archaeology, however, a new focus on agency emerged, especially as related to Bourdieu's (1977) conception of *habitus*.

Substantivism emphasizes that traditional economies are and were completely embedded in social relations. In line with this relativistic position, a new trend in European prehistory is to reject grand narrative and rather pay close attention to the historically specific details of individual cases (Kienlin 2015). The contributors of *Artisans* generally position themselves in this trend, emphasizing how artisan production was inherently social and historically distinctive to each case. Two sociocultural concepts that guide the work of several contributors are *chaine opératoire* and communities of practice. ***Chaine opératoire*** (operational chain) includes the technical and social steps in production, distribution, and use of objects like pottery or stone tools. The concept was originally articulated by the French prehistorian Leroi-Gourhan, a student of the French Structural Functionalist Marcel Mauss. This approach is particularly well illustrated by the detailed ethnographic study of artisan choices in ceramic manufacture (Tencariu). Although conceptually similar to the economist's 'commodity chains' as described later, *chaine opératoire* presents a holistic understanding of an artisan's "technology and human behavior, in relation with the environment and the economic and social context" (Tencariu). As described by Albero et al., the concept helps understand how productive processes operate to 'reproduce' social and individual structures. These uses of *chaine opératoire* stress a new sense of personal agency, central to post-processual thinking (Hodder 1982). This concern for agency involves 'getting into the artisan's head' to see the array of artisans' choices, many guided by individual preference, social norms, technical limitations and the like. It provides a modern and usefully anthropological understanding of traditional artisans; analytically it is open-ended and difficult to use comparatively, but this, not the goal of substantivists, for whom the case stands as the subject of inquiry.

Communities of practice are constituted by people, who share an artisan tradition, as would be typical of a workshop or crafting community. The concept was developed by social anthropologist Jean Lave to describe how common and effective practices are learned by members of a workshop through apprenticeship. "Expertise and the learning process which encourages it do not originate out of the blue: they

are socially sanctioned in the larger organisation of crafting communities of practice" (Albero et al.). Technical expertise in a community of practice involves sharing of knowledge, sanctioning deviation, and creating experimental innovations that are accepted if seen as advantageous to the community. Analytically, it is a useful way to conceive how general practices characterize an artisan's community. The emphasis on social relationships among culturally situated artisans places the concept squarely within a substantivist tradition.

The central tenants of substantivism, as developed by post-processual archaeologists to understand prehistoric economies, and as used in *Artisans* are the social construction of productive processes and the key role of the personal agency. An interest in the agency, not originally part of substantivism, provides a useful linkage to formalism.

Formalist perspective on artisans

Formalism is based on a theory of choice rooted in microeconomic theories of rationality, cost analysis, and maximization. Polanyi labeled this approach formalism to recognize its 'formal' (mathematical) objective to model choice according to principles of competitive-driven efficiency in production, distribution, and consumption. Such approaches have been used broadly in economic anthropology to explain common patterns of economic behavior observed across historically independent cultural contexts, especially with the existence of markets. In sharp contrast to post-modernists approaches to the agency, however, emphasis among formalists is on universal, rather than culturally specific, choices.

Studies of craft production by American archaeologists often use microeconomic theories of choices to investigate how concerns with costs and demand determine an artisan's decisions. To the degree that the making of such things as ceramic or metal has common technological steps cross-culturally involving specific costs, a formal model provides a basic logic for the choices among alternative steps in the productive chain. Two related concepts are basic to a formalist logic: economies of scale and regional comparative advantages both of which create competitive advantages for artisans regionally and inter-regional. Following the original reasoning of Adam Smith, the primary cost advantages of specialization with better technologies are **economies of scale**, meaning simply that costs of making each item decreases with the number of items produced. In Smith's illustrative example, the costs per iron nail for individual farmers producing their own nails would be prohibitively greater than the cost of a small nail factory producing many nails sold to

the farmers. Lowered costs associated with economies of scale reflect task-specific training and specialization, special skills, and dedicated technologies. This was Smith's argument for a free market, in which individual firms competed to produce the lowest cost items, like nails, which would increase the availability (consumption) of these items.

Based on a formalist logic, archaeologists can expect crafting in industries with economies of scale to become specialized, in contrast to those crafts with little or no such effect. It is not by happenstance that most studies (8 out of 10) in this volume involve pyrotechnic industries for ceramics, metals, and glass. All were specialized, to a lesser or greater extent, for the simple reason that they held economies of scale reflecting complicated, esoteric knowledge as seen in metal manufacture (Babić) or glass (Rolland), relatively long productive chains, and special equipment like kilns and wheels (Tencariu). The per unit cost for a household to produce its own ceramics, for example, would have been prohibitively high when compared to costs for a specialist to produce pots for exchange. Was productive efficiency always the guiding production principle in traditional societies? Certainly not, as the social context of production and exchange must be carefully considered, as several chapters make clear, but economies of scale were sufficiently important that all ethnographic cases of pyrotechnic industries (ceramics, metals, and glass), of which I am aware, involved specialist production to some degree. Although characteristically taking place within the individual household, such production was geared to exchange within the community, between communities, and between regions. Here the concept of a community of practice (Albero et al.) is important: the apprentice training and sharing of skills among a group of artisans would have increased significantly the group's overall efficiency and competitive advantage in exchange.

Distinct from pyrotechnic industries, many goods used by traditional families could be produced for their own use. To the degree that wood, fiber, bone, leather, and stone materials were generally available and required skills in crafting that were fairly easy to master, limited economies of scale existed, and individuals within each household could produce such items for the family's use. Such examples of household production for use are appropriately not studied in *Artisans*. The bone tools in Vinča culture were, however, produced as a "standard, important daily craft" (Vitezović). Although involving skill in the manufacture and in a choice of appropriate raw materials, production appears to have been geared primarily to use within the household, possibly for specialized production of something else like hides or textiles. The community of specialized textile workers, for example, would have shared knowledge of

the full range of production techniques, such as the bone type and finishing needed for an effective textile tool, but only the textiles or other items were explicitly manufactured for exchange and thus were, by definition, specialized. I would consider the specialists' making of its own tools not to represent specialization because the bone tools were not produced for exchange.

Following the logic of David Ricardo, communities in different regions can obtain **regional comparative advantages** in resource access, technology, and knowledge that allows them to produce better items more efficiently (at lower costs) and exchange them inter-regionally for other goods (Shennan 1999; Ling et a. 2014). At the regional level in Europe, patterns of exchange with presumed artisan production emerged for a range of staple and wealth items from the Neolithic onwards. Ceramics is of special interest to this volume, and the development of regional comparative advantages in pottery manufacture was probably related to special skills, technologies and locally available, high-quality clays. By late Antiquity, ceramic production was geared to market exchange, and high regional demand encouraged the adoption of the wheel and water-based distribution (Hodder and Orton 1976). Artisans must have been central then to production of a wide range of ceramics, and specialized traders and merchants also emerged. By the Middle Bronze Age in the Aegean, standardized pottery production appears to indicate regional specialization and market-like exchange across quite broad regions that probably continued through Antiquity (Davis and Lewis 1985).

Outside of the Aegean, however, although produced by skilled specialists, production of most ceramics appears to have been more limited in scale and distribution. As an example, in the Middle Bronze Age settlements of Hungary, pottery was distributions only locally, largely within 10 or 15 km (Earle et al. 2011). Where higher levels of ceramic specialization emerged, likely reasons might reflect what has been called 'ceramic ecology' (Arnold 1985). Communities that existed in zones with poorer soils could specialize in craft production, such as in ceramics, which could be traded for food or other commodities. To gain access to metals, each community needed to enter into the regional exchange with some export product, for which high-quality ceramics was always an option. Such specialization often appears to have involved special ceramic items, which did not compete with local ceramic industries. For example, LN/LE Vinča and Vučedol pottery show more standardization for serving vessels, which undoubtedly served as display objects, than for utilitarian forms used for storage and cooking (Vuković and Miloglav). My guess is that in this case and others involving elaborated ceramics, specialization

and trade emerged in association with active communities of practice, which formed synergisms that nurtured refined skills and creativity in design and execution. In contrast, often utilitarian ceramics were much more frequently locally produced, probably because of highly localized networks of exchange (Earle et al. 2011).

Other specializations based on comparative advantages internationally were grounded on access to high-quality raw materials, such as metal ores, wool, and the like. For these and other regional availabilities, technical abilities would have developed to produce the raw materials for export. The case for regional comparative advantage in metal extraction and processing is well documented for the Bronze Age when a network of extensive exchange involved specialized producers and traders from the Beaker periods onward (Ling et al. 2014). Another example of regional comparative advantage was in glass manufacture. Although Iron Age glass was locally finished in Europe, comparative advantages based on available material, skill, and resulting economies of scale meant that raw glass was produced in bulk in the Middle East and traded by boat to Europe (Rolland).

Many examples of specialized stone tool manufacture also exist for prehistoric Europe. Most important were localized distributions of high-quality raw materials required for special tools. Additionally, knowledge and skill must also have given comparative advantage based on mining and manufacturing techniques. Standard examples include specialized production and distribution of Early Neolithic axes, which depended on localized, high-quality stone sources, often requiring deep mining (see Bradley and Edmonds 1993) and Late Neolithic and Early Bronze Age daggers, which required special mined flint blanks and refined knapping skills needed to produce the distinctive parallel flaking patterns (Apel 2001). In *Artisans,* the procurement and trade of flint blades illustrate comparative advantages in specialized stone tool production during the Late Neolithic/Chalcolithic Period of Serbia (Bogosavljević Petrović). Flint suitable for the best blades was localized, the striking of blades was highly standardized, and the high skill level required for their manufacture appear together to have created a specialized blade industry. Again, the knowledge and practice of communities of practitioners would have been critical to develop and perpetuate refined skills that gave a region comparative advantage in a locality of knappers.

In order to investigate such formalist patterns of behavior, it is essential to study the linkage of production to patterns of demand, distribution, and consumption. Perhaps most important is to look at the nature of distribution through reciprocal exchanges in social networks,

redistribution centrally by chiefs, and market exchanges where artisans, traders, and merchants acted as partially independent agents. These linkages have elements of choice involving cost evaluation, but, for a comprehensive understanding, they also require approaches from substantivism (looking at the social significance of objects and their exchanges) and political economy (looking at the potential for channelling of production and distribution by elites). Lacking an adequate consideration of social context and the power relationships limits the utility of formalist approaches, but still, formalism puts human agency (the individual decision maker) central to understand how human economies were created by aggregate choices involving costs considerations.

Political economy approaches to specialized production

First formulated by 18th and 19th Century social philosophers, **political economy** approaches to study how the structuring of the national (political) economy created relationships of power and inequality that benefited some differently than others. Similar to substantivism, these approaches emphasize how social relationships (relations of production in Marxist terms) form economic relationships. From Marx, the emphasis focused on how the material base created particular segments (classes) with different relationships to the economy in what was called 'modes of production' (Earle and Spriggs 2015; Earle 2017). Like substantivism, Marxist approaches have deemphasized the role of human agency (the individual decision maker). The primary concern has been the creation and maintenance of power relationships based on the ability to channel flows in the general economy.

The lack of agency in the formulation of the Marxist political economy has been addressed recently by collective action theory, which significantly refines the earlier tradition (Levi 1988; Blanton and Fargher 2008; see DeMarrais and Earle 2017). In collective action theory, societies are seen as composed of many segments, and each works together to benefit their respective interests as classes, communities, artisan cooperatives, etc. Economic and political manoeuvrings of both elites and commoners in these segments are viewed as acting rationally, following a rather formalist logic.

To conceive fully of a political economy approach, it is essential to see the general economy as having multiple roles linked to different demand crowds (Earle 2017). First was the subsistence economy, geared in traditional societies to meet the needs of the population for food, clothing, housing, and the rest. The second was the social economy, the focus of

substantivism, geared to forming and maintaining social relationships and identities. The political economy could gain power through channelling flows in either economic sphere to finance institutions of domination or resistance. It could control people directly by channelling food production, especially through ownership of land and its technological improvements like irrigation. It could also control social relationships and status definition by channelling the production and exchange of socially significant objects. Concerning artisan products, tools and utensils of everyday use were part of the subsistence economy, and weapons and prestige objects were part of the social economy. Of course, some objects, like special foods or clothing, can combine both functions. Particularly important for the political economy as related to artisans was prestige goods, which carried messages for the social construction of identities.

Since V. Gordon Childe (1942), the importance of specialized production in the Bronze Age has been well recognized as a driving force in the emergence of social inequality. What has hindered studies of specialization is, however, a comprehensive understanding of the contexts linked to the political economy. To understand contexts, I have emphasized the analyses of full commodity chains. Similar to the *chaine opératoire*, **commodity chains** consider flows, involving all steps from original procurement and processing of raw materials, to their distribution to artisans, the technological steps producing finished objects, their movement of these objects through social networks, and finally their uses in consumption. Such analyses are common in economic studies of world economies. Regarding emergent political economies, I consider potential bottlenecks in the commodity chains of significant commodities. A **bottleneck** is a constriction point that allows individuals to channel a commodity's distribution (Earle and Spriggs 2015). By channelling flows for a prestige object, for example, a social elite could determine how meaning and identity were formulated and expressed. Thus, it is essential in our consideration of objects produced by artisans to consider bottlenecks in their chains. Looking at the full commodity chain of metals in Bronze Age Europe, for example, I have laid out a list of potential bottlenecks, one of particular importance being control over artisans (Earle et al. 2015).

Because of special knowledge and skill, all artisans exert some measure of control over their own productive process. This control is exercised by the community of practice as described in this volume. An excellent historical example was the monopolies of goods granted to medieval guilds by monarchs; the guilds controlled participation and thus benefits from their specialization. Additionally, demand for products and

availability of raw material are key to understand the role of artisans in an emergent political economy. Costin (1991: 4) argues that specialization varies greatly according to context, concentration, scale and intensity, such that specializations' roles in the general and political economy are not constant and must be studied as a key variable.

Specialization in and of itself does not create an ability to control production in a political economy; it is the particular context of artisan production that is critical. To characterize variation in artisan production as linked to the political economy, I (Earle 1981) defined two ends of a spectrum of artisans: independent specialists vs. attached specialists, each with quite different roles in the emergence of social complexity.

> *Independent specialists* produce goods or services for an unspecified demand crowd… [as characterizes a market]… *attached specialists* produce goods or provide services to a patron, typically a social elite or governing institutions. [Brumfiel & Earle, 1987: 5]

Attached specialists in traditional societies were typically highly skilled artisans, who were bound to elite patrons, for whom they produce wealth items such as weapons and status objects. The artisan can be attached to a patron by direct proximity and management (in palaces), by the supply of key raw materials (like foreign metal or glass), by subsistence support (assigning farmland or providing allotments), and/or by supplying special tools (for the production chain). Most commonly, attached specialization is identified by concentrated production debris, for example of ceramic wasters or specific tools, directly associated with elite institutional structures like palaces. To the extent that specialized production is 'attached' to a ruling segment of society, elites can create an effective bottleneck that helps channel flows of culturally significant objects through their hands and thus allow them to manipulate access to the means for social distinction. To the degree that knowledge of the productive process was highly complicated, as in metal manufacture, the number of specialists was probably quite small and their products more effectively channeled.

From my reading of the case material in this volume, cases of attached artisans appear to have been quite limited. The most reliable way to identify attached artisans is, as discussed momentarily, the concentration of production debris and tools in close association with elite personages, but, because analyses in this volume do not consider this spatial context of production, my conclusions are preliminary. Characteristics of the finished object, however, can suggest the work of attached artisans by their

distinctiveness (lack of standardization), by their unusually complicated *chaine opératoire,* and by use of foreign materials. Ceramics have often been highly elaborated in ways that restrict the range of possible artisan producers. By supporting these highly skilled artisans, elite patrons could distribute their products to materialize status hierarchies. In simple terms, to mark the distinction, objects should be out of the ordinary, and this is made possible by the highly skilled labor of artisans.

The most likely examples of attached artisan production are for the burial ceramics and metal work in a Macedonian Iron Age necropolis (Babić). Specialists, perhaps attached to local princes, probably produced the elaborated ceramics in Archaic Attic styles. Highly distinctive (exotic) objects from these Trebenište graves also included "four funerary masks of golden foil meticulously decorated with stylized facial details and bordered by bands of geometric ornaments" (Babić). Analogous to the fine Mycenaean death masks of the Late Bronze Age of the Aegean, these masks evidently marked princes in the local society. Of 56 graves, 13 are thought to be 'princely' based on the distinctiveness of their metal goods. Of particular importance, these graves were highly variable with objects representing a "wide range of shapes," suggesting diverse elite statuses. Grave IX is of particular interest: it includes bronze vessels of Greek origin and a set of iron blacksmith tools. I agree with Babić that this metal artisan appears to have had a foreign association, as suggested by the Greek vessels; the artisan's probably magical assets, as associated cross-culturally with metallurgy, indicates that this individual may have been critical for creating meaning in Macedonian society. This is exactly what I would expect for attached specialization. Another possible (but more doubtful) example of attached specialization is in La Tène glass jewelry manufacture (Rolland). The skills of a glass making might similarly have been esoteric and thus controllable, but the more likely bottleneck could have been accessed to the important raw material, moving by ship from the Middle East. Control over metal production in LBA Aegean palace economies, for example, was apparently realized by palaces channelling international metal flows (Earle 2011).

Most artisans described in this volume appear, however, to represent independent specialists. **Independent specialists** produce goods for a 'demand crowd,' using the economics terminology, that is not closely associated with the producer. Such artisans populate market economies, but they also would have been part of larger reciprocal networks of exchange. Such specialization is difficult to control; rather than creating channeled distributions through the political economy, individual and community producers could have acted largely as independent agents

(Brumfiel & Earle, 1987: 5). The highly standardized production of blades, as described by Bogosavljević Petrović was probably associated with independent artisans, producing for exchange. A good comparative example of specialized blade manufacture was independent Mesoamerican knappers producing for prehistoric markets (Hirth 1998).

In this volume, most examples of ceramic production would appear to represent artisans working independently of elite patrons, but embedded in communities of practice. The most fully developed examples are the two ethnoarchaeological studies of modern ceramic production for markets in Rajasthan, India (Roux and Karasik) and in Romania (Tencariu). Competitive conditions of these artisans create strong economies of scale based on knowledge of routine steps, special technologies (wheel and kilns), and established networks of distribution. Economies of scale for prehistoric ceramics, as described in these chapters, would have resulted in specialized artisan production, but little opportunity for elite control.

In the prehistoric cases of ceramic artisans, most appear to have been independent of elite patronage. As discussed by Copat, decorative objects were symbols in action, using Hodder's (1982) famous phrase. The stylistically elaborated ceramics of Late Neolithic and Early Eneolithic southeastern Europe illustrate how ceramics projected a common cultural identity through objects of everyday and ritual uses (Vuković and Miloglav). No evidence suggests that they were attached to elite patrons; rather without bottlenecks in these commodity chains, ceramic production would have been uncontrollable. Ceramics served to form group identities rather than hierarchical distinctiveness (Vuković and Miloglav).

As mentioned earlier, Costin (1991: 1) identifies craft specialization as ideal for archaeological investigation because of its rich material signature. I encourage European scholars interested in artisans to expand their field of study to identify the specific contexts of workshops both within and between prehistoric settlements. Specific locations of fabrication can be identified by both manufacturing tools, specialty facilities, and concentrated debris. Perhaps the easiest way to identify specialization is a simple ratio between production debris and their working tools vs. the amounts of consumption of those objects in the same household. The typical pattern cross-culturally in traditional societies is to identify households as the primary unit of both production and consumption. Each household produced much of what it consumed, but part-time specialized production was common in some industries, especially pyrotechnic objects and blades. Often the specialist households were concentrated in the same settlements. These patterns can be studied archaeologically. An example of a specialized community in Middle

Bronze Age Europe involved textile production; located in the Po Valley of northern Europe. One community was unique for its exceptionally high density of spindle whorls, suggesting specialized spinning, perhaps used as an export product in exchange for needed metal (Sabatini et al., n.d.).

In the Andes during the Late Intermediate Period (1200-1460 CE), Costin (2001) compared communities and households with each other based on the amount of production debris from stone, ceramic, metal and textile production. For most stone tool manufacture, as an example, a somewhat standard ratio between tools and debris existed across households. In contrast, however, blade cores and rejected, unused blades were highly concentrated with respect to the blade with use wear in some households concentrated in one village, located near to the chert source. I would expect that a similar pattern of community specialization could be demonstrated for the blade industry described by Bogosavljević Petrović. Returning to the Andean example, the ratio of ceramic spindle whorls to normal ceramic waste was used to measure the frequency of spinning in households and communities; spindle whorls were concentrated at higher elevation sites were access to alpaca wool was easiest. Blade manufacture and spinning were not concentrated in elite houses and so probably involved independent specialists. For the Inca empire in Argentina, however, although metal mining and smelting took place unregulated in local communities, a bottleneck in artisan production was created by the concentrated manufacture of finished objects of adornment within the Inca administrative center (Earle 1994). This illustrates the importance of studying the full commodity chain for objects.

By looking at the specific character and context of artisan production, it is possible to see whether it could be used strategically as a bottleneck. My sense is that such situations were relatively rare in prehistoric Europe and linked primarily to state societies that emerged in the Mediterranean world. Most European specialization, as described in *Artisans*, would thus have liberated artisans (communities of practice) to act independently to form regional networks outside of chiefly or princely control.

Towards a synthetic understanding of artisans and their roles cross-culturally in traditional societies

Specialized artisan production is an ideal topic for archaeological investigation. It opens up a clear window on both particular objects and their linkage to cultural identity, social relationships, patterns of distribution, and mechanism of elite control. The volume's chapters document many examples from Europe and show them to have quite

different characteristics from the Late Neolithic to the modern age. To understand the prehistory of Europe, I would argue, involves explicating the role of economic relations.

As a theoretical foundation for studies of artisans, I describe the three approaches of economic anthropology. The most anthropological is substantivism, which emphasizes that traditional economies were deeply embedded in social relationships. Thus, distinctions in economies reflect contrasting social structures. But how can we understand the long-term histories of human societies that have created the differences across time and space? Can we understand chronological sequences as more than historical accidents, created for example by the replacement of one ancient culture by another?

To do this we must look systematically at how selection among economic options was made, and here formalism and political economy offer important additional influences on the choice that would have guided change. Formalists suggest that economic decisions cross-culturally are based on the evaluation of costs and that contrasting technologies, resource distributions, and knowledge governed choices. Emerging economies of scale with new technologies and scales of distribution would have significantly altered cost parameters and created particular trajectories of change. Additionally, political economists suggest that selection among alternative economic options involved the furthering of individual and group interests both in terms of domination and resistance. A community of practice could act largely independently, coordinating work and information, but elite segments could try to control artisan production and distributions as a means to established cultural primacy.

Considering both existing conditions and general processes of selection constitutes, I believe, the essence of historical sciences. To a large measure, the participants in this volume take an implicit substantivist (humanist) approach, which emphasizes the importance of individual cultural histories as materially constituted. Careful attention to these historic specificities is the first obligation, as recently promoted by Kienlin (2015). At the same time, it is of theoretical significance to place such details with comparative studies of formal economics and political economies. All artisans must consider aspects of costs and efficiencies in their production of goods that were widely distributed. Here rational decision-making by individual artisans and replicated through joint knowledge of practice would seem essential. Costs at each step in the technological chains can be assessed. I have drawn particular attention to economies of scale, which play important roles in the development of particular technologies of production from special skills in core

preparation for striking blades, to pottery wheels and kilns, to glass ovens and iron smelters. The specific patterns of distribution through kin networks, political channels, and/or market systems would have been highly variable, creating particular demand for uniformity, individuality, and distinctiveness. The pattern of distribution would have heavily influenced artisans' rules for effective production based on culture expectations, competitive exchange value, and political use.

And then a political economy elucidates how artisan production may create or dissolve bottlenecks in the flow of commodities as a means to fashion meaning, to access weapons of war and suppression, and to monopolize wealth. Each system of artisan production can be analyzed as to whether it created or dissolved potential bottlenecks in commodity flows. Such an approach helps formulate ways in which artisans affected social evolution. An evolutionary (political economy) approach is treated only lightly by the participants of this volume, but, as recognized by Babić, archaeologists often use an evolutionary mentality to organize our thinking; perhaps this is clearest in the persistence of our technological divisions of prehistory into the Neolithic, Bronze and Iron Ages. Technology and artisans have been basic to our understanding of the *longue durée*. The volume might, however, be seen as an implicit critique of social evolutionary models. This is a misconception of the political economy approach. When talking about social evolution, archaeologists often refer to Service's (1962) simplified, unilinear scheme: band, tribes, chiefdoms, states. Since the middle of the 1970s, however, researchers investigating social evolution have largely abandoned such classification schemes, except for heuristic purposes. We believe that social typologies obscure just the variability that we seek to study (Neitzel and Earle 2014). Chiefdoms (polities in the thousand to tens of thousands) have been shown to be ethnographically (Feinman and Neitzel 1984) and archaeologically (Earle 1989) highly variable. It is the alternative pathways to the complexity and the alternative formations of complex societies, which have become a central concern of processual archaeology (Price and Feinman 2010). What we seek to explain, for example, is no longer the 'evolution of chiefdoms,' but the changing nature and extent of power centrality or inequality. To do this we look at the exceptionally diverse forms of the political economy and how it forms particular political formation, what Marx called modes of production (Earle and Spriggs 2015; Earle 2017). Here, the specificity of individual historical cases becomes essential. As an example, Babić argues that we must look for the irregularities, the unexpected patterns in the relationship between craft specialization and political institutions. Artisans were key for the