Report on an ongoing research project: craft specialization and prehistoric society
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Report on an ongoing research project: Craft specialization and prehistoric society

By Deborah Olausson


The ability to identify craft specialization in the archaeological record has wider ramifications for the study of prehistoric society, since it is apparent that there is a certain relationship between the organization of craft specialization and social complexity. The aim of the project is to determine if craft specialization was present in pre-Iron Age southern Scandinavian society and to describe how it was organized. Since it is not possible to study all handicraft products, efforts are concentrated on particular artifact classes which are possible candidates to represent craft specialist products. These items and their possible workshop loci are being examined in view of certain qualities which previous work with craft specialization has suggested may be useful for determining whether or not they are craft specialist products. In addition to studying the morphology of these artifacts and to searching for possible workshop locations, the project involves practical replication experiments and interviews with contemporary practitioners of the technologies studied.

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In the course of studying Swedish neolithic flint and groundstone axes (Olausson 1983a, 1983b), it became evident that the question of whether craft specialization was present in the Swedish neolithic could not be definitively answered, based on knowledge we had then. One consequence of this was particularly apparent in Olausson 1983b, where the question was raised as to whether specialist production was one of the criteria used by neolithic axe owners when they evaluated flint and groundstone axes. An assumption of craft specialization has in many ways also been a basis for interpreting extraordinarily long and well-proportioned thin-butted flint axe blades as prestige objects. The ability to identify craft specialization in the archaeological record has wider ramifications than answering such relatively specific questions, however, since it is apparent that there is a certain relationship between craft specialization and social complexity.

With these thoughts in mind, a research proposal was formulated and submitted to The Swedish Research Council for the Humanities and Social Sciences. Funding was granted, and the project has been carried out on a part-time basis since July 1990. The project’s aims are to study the following questions: when did craft specialization become a part of the ongoing socio-economic system in south Scandinavian prehistory; what kind(s) of craft specialization was/were present; and finally, what can our knowledge about the organization of craft specialization tell us about the social system in which it was present?

Past studies of the phenomenon of craft specialization have generally argued that social complexity meant that craft specialization was probably present. In the present study
however, the aim is instead to concentrate efforts on ascertaining criteria for identifying craft specialization in the archaeological record. The relationship between the organization of craft specialization and the social system which supports it must necessarily rely on analogies with other societies where this relationship can be studied. It is apparent, however, that it is meaningful and indeed necessary to focus attention upon the way in which craft specialization is organized in each context under study. Only then can meaningful statements about specialization, exchange, and social complexity be made (Brinnfield & Earle 1987, p. 4).

**Attached and independent specialists**

We may define craft specialization as the production of durable goods for the purpose of exchange; that is, it involves the transfer of goods from the producer to someone outside his/her immediate household (Clark & Parry 1990, p. 297). Like most socio-cultural phenomena, craft specialization is not a discrete but rather a continuous variable: specialization is a continuum along which any economy can be gauged. At one end is the domestic mode of production in which the division of labor is limited to age and sex differences in the family. At the other end of the continuum is the modern industrial economy in which the division of labor is enormously complex (Brumfiel & Earle 1987, p. 5). Many traditional societies are characterized by part-time specialists. At the lowest level of specialization, the production of some good is used to augment the basic economic activity. At the highest level, individuals work full-time at very specialized tasks. It can however be difficult to distinguish these archaeologically (Costin 1986, p. 344).

Furthermore, once craft specialization has been identified, I maintain that making a distinction between two types which we can call attached and independent craft specialization can enable us to draw conclusions about living social systems. If someone other than the crafts-person controls the finished product, we refer to this as attached specialization. Independent specialization means that the crafts-person retains the rights of alienation to the product (Clark & Parry 1990, p. 298). This distinction will prove to have fundamental consequences for what to look for in the archaeological record and for the interpretation of social complexity.

The decision to abandon direct subsistence activity in favor of spending time at producing some product which is intended for a consumer outside one’s household involves risk. Such risk is minimized for the attached specialist because the patron has “paid” for the product before it is produced. Patrons often supply the subsistence needs of the craftsperson, at least while he/she is producing (Brumfiel & Earle 1987, p. 5). The attached specialist is paid to produce goods which are rare and costly and which therefore confer status upon their owner, i.e. the patron. Borrowing a term from Malinowski, Clark and Parry call such goods “hypertrophic” (Clark & Parry 1990, p. 293). Hypertrophic goods take a long time to produce and are therefore not numerous.

The independent specialist, on the other hand, seeks to minimize his/her risk by increasing the volume of production. By increasing efficiency and producing standardized products, the craftsperson spends less time on each item and thereby can earn more per unit time spent on production. Independent specialization, unlike attached specialization, requires a large demand crowd for what is produced. As Costin says, conditions which limit the extent or definition of the demand crowd for specific goods will promote attached specialization, while conditions which enlarge the demand crowd will promote independent specialization (Costin 1986, p. 354). Independent specialization develops in response to resource density and increasing population density. Attached specialization develops largely as a function of elite coercive control and elite income (Brumfiel & Earle 1987, pp. 5–6).

Furthermore, items supplied by independent specialists tend to be utilitarian items; that is, they are used by most households on a frequent daily basis. All members of society are potential customers (Costin 1986, p. 331), which guarantees a large demand crowd.
Items produced by attached specialists for their patrons are by necessity unique and rare. It is because the attached specialist is supported by his/her patron that he or she can afford to invest time and talent in the work. The qualities which are invested in the product are in turn used by the patron to affirm his/her position in society. The patron is thus assured value for payment. Although production by attached specialists responds to considerations of efficiency and security, it develops first and foremost in response to needs for control in the political economy (Brumfiel & Earle 1987, p. 5).

I will argue below that the importance of distinguishing between attached and independent craft specialization archaeologically lies in the fact that they are related to different levels of social complexity. It should be possible to identify craft specialization, and further to distinguish between attached and independent craft specialization, by examining the archaeological evidence for certain characteristics on products (Table 1). For instance, items produced at the household level should involve short manufacturing time, little skill, high error frequency but a low degree of standardization. They should occur widely and be made of raw materials which are available to virtually everybody. We would expect to be able to identify attached craft specialization by its products: an item which is non-utilitarian, infrequently occurring, and showing skill of workmanship; or by the location of production: at an elite residence or perhaps in a normal household setting. The products of independent craft specialization should be: utilitarian, standardized, numerous, and not decorated or elaborate. Workshops will have a high volume of debris, and this debris should also show evidence of standardization. Table 1 shows expected outcomes for three possibilities we can expect: household production, attached craft specialization and independent specialization.

Let us look at each of these characteristics in more detail, to see how they might be identified. Much work has already been done towards looking for archaeological criteria for identifying independent specialist products and workshops (e.g. Michaels 1986; Roemer 1984; Shafer 1983; Shafer & Hester 1983). The amount of labor invested in manufacture can be measured during practical trials in which copies of the artifacts studied are made using techniques which could have been known to the populations one is studying. A more difficult question to address is handcraft skill. Probably, attached specialists acquire their position through highly developed skill or through a special knowledge of technology (Michaels 1989). Some work has already been done towards developing criteria for identifying skill in flintworking (e.g. Cahen 1987; Cleghorn 1986; Roemer 1984). One could also argue that skill is an asset for the independent craftsman, because greater skill means greater speed and efficiency in production. It is clear that this area does need closer study and it is one of the focuses of the experimental work of the project.

Speed of production can be determined through practical trials, assuming contemporary craftspeople can be found who have simi-

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Table 1

<table>
<thead>
<tr>
<th>Expected outcomes:</th>
<th>Man. time</th>
<th>Man. skill</th>
<th>Error</th>
<th>Stand.</th>
<th>Size</th>
<th>Rare mat.</th>
<th>Lim. dist.</th>
<th>Workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household prod.</td>
<td>low</td>
<td>low</td>
<td>high</td>
<td>low</td>
<td>small</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Attached craft spec.</td>
<td>high</td>
<td>high</td>
<td>low</td>
<td>low</td>
<td>large</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Independent craft spec.</td>
<td>low</td>
<td>high</td>
<td>low</td>
<td>high</td>
<td></td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

Man. = manufacturing
Lim. dist. = limited distribution

Stand. = degree of standardization
mat. = material

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lar skills as prehistoric craftspeople. Establishing standardization of products or debris and size of products is not difficult and is being studied through measurements. As an example, Michaels (1986) has proposed criteria for measuring standardization on chert products from the Mayan chert workshop at Colha.

The questions of the location of production and the volume of production debris are thorny ones for the archaeologist. Part of the problem arises because of another variable which we have not as yet considered which cross-cuts the above categories. Both attached and independent specialists can work part-time or full-time at their trade. Two factors determine whether production is part-time or full-time: efficiency and risk. If independent craftspeople can combine craft production with agricultural production, they will remain part-time specialists in order to minimize risk (Costin 1986, p. 363). With such an arrangement, we would expect independent specialists to work at home, not in restricted locations. However, as production increases to full-time, workshops are moved to separate facilities (Costin 1986, p. 333). Part-time attached specialists should be expected to produce at home as well. Those who are full-time attached specialists are however typically associated with elite residences or state architecture (Costin 1986, p. 332). Therefore, neither the volume nor the location of manufacturing debris is a particularly good indicator to use when trying to distinguish between attached and independent craft specialization, although it is a good indicator for household production. Nevertheless, as we noted above, where manufacturing debris is available for study it can be useful for determining how standardized production was.

**Identifying craft specialization in Scandinavian prehistory**

Once the test implications for household production and for attached and independent craft specialization have been established, it becomes easier to envision how to approach the problem of determining if and when specialization was present in Scandinavian prehistory. Examining the entire range of artifacts and debitage from Scandinavian prehistory is of course an impossible task. It is therefore necessary to limit the study in time and space. It is generally accepted that craft specialization was quite firmly developed by the iron age, and no doubt the organization of craft specialization then was complex and would therefore be difficult to study in detail. Since one of the aims of the project is to study the link between the organization of craft specialization and the society which supported it, I choose to confine my efforts to identifying craft specialization when it is likely to have been present in the social contexts of Scandinavia and to limit the study to the stone and bronze ages. Geographical limits are set by the provenience of the artifacts chosen for study. The aim of the study is partly methodological: that is, to demonstrate ways of identifying craft specialization in the archaeological record. The choice of archaeological material can therefore be an arbitrary one, provided the material can reasonably be assumed to be adequate for demonstrating craft specialization. Practical considerations have meant that southern Scandinavia has been chosen as the primary area of study, although when it is necessary to increase the size of a sample, artifacts from nearby regions are included.

The problem of generalising from a sample, always present in archaeological research, is particularly serious to this project. I will never be able to study the total production from any one time period, and the fact that it is up to me to choose which artifacts to study means that the results can only be of partial validity. A negative result in any one case allows me only to conclude that craft specialization was not used to produce that particular product. A negative result does not allow me to conclude, however, that craft specialization was not present during that time. Prospects are brighter for the reverse result, however, e.g. if I can identify certain products as craft specialist products, then I should be able to identify when craft specialization began (within broad temporal limits, of course). If I can go further and determine whether specialization was attached or independent, I will consider the project’s aims to have been fulfilled. As
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Table 2. Determinants for craft specialization.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Man.</th>
<th>Man.</th>
<th>Low error</th>
<th>Stand.</th>
<th>Size</th>
<th>Rare raw mat.</th>
<th>Lim. dist.</th>
<th>Workshop?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microblades</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1×w</td>
<td>1</td>
<td>arch.</td>
<td>arch.</td>
<td></td>
</tr>
<tr>
<td>Mace heads</td>
<td>exp.</td>
<td>exp.</td>
<td>arch. prep</td>
<td>h×d×d</td>
<td>h×d×d</td>
<td>geol.</td>
<td>arch.</td>
<td></td>
</tr>
<tr>
<td>Thinbutted axe</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Thickbutted axe</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Battle axe</td>
<td>exp.</td>
<td>exp.</td>
<td>arch.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Flint dagger</td>
<td>X</td>
<td>X</td>
<td>arch.</td>
<td>X</td>
<td>X</td>
<td>arch.</td>
<td>arch.</td>
<td>Formæs</td>
</tr>
<tr>
<td>Flint pruning knife</td>
<td>exp.</td>
<td>exp.</td>
<td>arch.</td>
<td>1×w</td>
<td>1</td>
<td>arch.</td>
<td>arch.</td>
<td></td>
</tr>
<tr>
<td>Bronze palstave</td>
<td>exp.</td>
<td>exp.</td>
<td>arch.</td>
<td>1×w</td>
<td>wgt.</td>
<td>X</td>
<td>X</td>
<td>Oldeberg 1974</td>
</tr>
<tr>
<td>Bronze sword</td>
<td>exp.</td>
<td>exp.</td>
<td>arch.</td>
<td>1×w</td>
<td>wgt.</td>
<td>X</td>
<td>arch.</td>
<td>Oldeberg 1974</td>
</tr>
<tr>
<td>Bronze tutulus</td>
<td>exp.</td>
<td>exp.</td>
<td>arch.</td>
<td>d</td>
<td>d</td>
<td>X</td>
<td>arch.</td>
<td></td>
</tr>
</tbody>
</table>

Man. = manufacturing  
Lim. dist. = limited distribution  
X = information in hand  
arch. = information gained through study of artifact morphology or provenience  
l = artifact length  
d = artifact diameter  
geol. = geological sourcing  
Stand. = degree of standardization  
exp. = replication experiment  
mat. = material  
w = artifact width  
wgt. = artifact weight  
h = artifact height

archaeologists, we are forced to live with partial answers, but I feel a partial answer is better than no answer at all.

A review of the artifact types from the stone and bronze ages of southern Scandinavia pinpoints several types which I consider relevant to study; i.e., possible candidates for specialist products. Table 2 shows which artifact types are being studied, and the characteristics which are being registered in the study.

It is already apparent that finding the locus of manufacture for items is of central importance for estimating volume of production, standardization, and type of specialization. Possible flint axe manufacturing locations will be examined, including Kvarnby in Skåne, and Hov (Becker 1980) and Hastrup Vænget (Hansen & Madsen 1983) in Denmark. Finding locations where pecked and ground tools were made is very difficult, since the debris (dust and small chunks of stone) will not be recognizable as manufacturing waste. Where it is not possible to identify manufacturing locations, emphasis is placed on a study of the products.

The question of whether late neolithic daggers were produced by specialists can be attacked in several ways. The amount of time and skill involved in their manufacture is being studied by Errett Callahan (Callahan 1984). Standardization has been recorded by Lomborg (1973), while the debitage from their manufacture has been described by Arnold (1981). Bjerck (1987) has called attention to a dagger found in Norway on which knapping by two individuals of different skills was visible. Bjerck proposed that the dagger had been made by a specialist, then reworked at the tip by a less skilled native knapper.

For bronzeworking, manufacturing locations are identifiable by casting refuse and molds. At this stage it would seem that bronze casting was an activity which was carried out primarily in a settlement context (Broholm 1949; Jaanussön 1981; Welinder 1977; Wrang 1982). However it is necessary to dis-
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tinguish between the casting of utilitarian items and luxury items. Knowledge of the amount of time and skill invested in bronze objects can best be gained through experiments such as those carried out by Lars Bengtsson at Tanum (Bengtsson 1986). There is as yet no consensus about how bronze casting was organized in bronze age society, however (Kempinsky & Segestam 1984, p. 10; Levy 1979, p. 52; Phillips 1980, p. 198; Randsborg 1986, p. 188).

Social complexity and the organization of craft specialization

The ability to distinguish between household production on the one hand and attached and independent craft specialization on the other means that we can arrive at statements about social complexity. The link between these is provided by ethnographic analogy, economic theory, and social anthropological theory.

The idea that craft specialization is correlated with chiefdom society is not new. Probably one of the earliest to suggest this was Service (1962). Archaeologists were not slow to pick up the notion, since any theory which enables us to move from the realm of material culture to that of social organization is welcome. Peebles & Kus (1977) is a well-known example of an attempt to develop the hypothesis so as to make it of direct use to archaeologists. While exceptions to the rule can be found among ethnographic examples (e.g. Hodder, 1982, p. 155), there does indeed seem to be a general correlation between craft specialization and social complexity. However, more information about the nature of social complexity can be gained if the organization of craft specialization can be described in detail.

Labor-intensive craft production can be expected in societies in which the maintenance of intra-societal differences is critical to the continuation of the social system. Labor-expensive goods (i.e. hypertrophic goods produced by attached specialists) are generally luxury goods, tokens of wealth, or status symbols. Consequently, they can be expected to be associated with societies in which marking and maintaining prestige is most critical: that is, ranked or chiefdom societies. The correlation of hierarchies and specialist skills is likely to be linked with obligations of status. Rulers or elites have to be seen to be generous, and the greater the distinctions made between people, the more likely it is for such leaders to become patrons of attached specialists (Orme 1981, p. 166; Service 1971, p. 162; Clark & Parry 1990, p. 297).

While hypertrophic production by attached specialists would be expected in ranked societies, where it is important to signal status differences, it would be out of place in band and simple tribal societies. In egalitarian societies inter-group differences are emphasized by stressing each group’s unity. Differences among members of the same group are minimized rather than marked (Clark & Parry 1990, p. 297; Orme 1971, p. 165). We might therefore suggest that a lack of evidence for any kind of craft specialization indicates an egalitarian society with household production.

Turning now to greater social complexity, we might suggest that independent craft specialization would be expected in societies with a high level of complexity. The products, intensity, organization, and productivity of independent specialists are guided by the principles of efficiency and security (Brumfiel & Earle 1987, p. 5). In state level societies, the demand crowd is large enough to insure a market for the specialist’s products. Social and economic differentiation and institutional segregation have long been posited as important factors in the development of craft specialization because they provide a demand crowd which possesses the capital necessary to support specialists (Costin 1986, p. 354).

Conclusion

To recapitulate the hypothesis: We expect a lack of craft specialization in egalitarian societies, attached specialist production of hypertrophic goods in ranked societies, and independent specialist production of labor-cheap (mainly utilitarian) goods in state-level societies. Since as archaeologists we do not have direct access to a measure of social complexity, the test of this hypothesis must come from ethnographic examples. Clark (1986)
has carried out such a test. He chose a sample of 54 societies from Murdock and White’s standard cross-cultural sample of ethnographic examples. He was able to validate the hypothesis. The most significant relationship was between full-time production of utensils and ornaments and highly stratified societies. Attached craft specialization was significantly associated with social stratification which “suggests that the presence of patronized craft specialization would be a useful indicator of rank societies” (Clark 1986, p. 36; Clark & Parry 1990, p. 322). Clark concludes:

the popular notion that craft specialization is associated with societal complexity was amply vindicated here. But the associations are only evident if one takes account of the kind and scale of craft specialization. It follows that archaeological attempts to use craft specialization as an indicator variable of societal complexity should make similar qualitative and quantitative distinctions. (Clark 1986, pp. 44-45.)

The relationship between craft specialization and social organization is of central importance to our understanding of how societies work. It is therefore of prime interest not only to those interested in living societies but also to students of prehistoric society.

References
Broholm, H. C. 1949. Danmarks bronzealder, bd. IV.
Sammanfattning


I artikeln definieras tre nivåer av produktion med delvis motsatta mål och organisationsstrukturer. Dessa är household production samt attached (beroende) och independent (beroende) specialistproduktion. Kriterier för att kunna identifiera dessa olika typer av produktion i ett arkeologiskt material anges i Tabell 1. Tabell 2 visar sedan urvalet av olika hantverksprodukter som studeras i projektet samt vilka egenskaper hos dessa som anses vara relevanta för projektets problemställning. Som framgår av denna tabell är insatserna koncentrerade till tidsavsnittet äldre stenåldern fram till äldre bronsåldern, då det bör ha varit under denna period som en hantverksspecialisering på "heltid" växte fram i södra Skandinavien.

Projektets metodik omfattar flera delar såsom studiet av morfologi hos valda artefakttyper, undersökning av möjliga verkstadslokaler, experiment samt undersökningar av psykiska egenskaper hos nuvarande flint- och bronshantverkare. De ställda frågorna besvaras således genom att ställa samman dessa resultat mot bakgrund av det teoretiska resonemanget som har förts utifrån ett mera socialantropologiskt synsätt.