

Observations from a Distance on Changing Stone Age Societies in Central Sweden

Peter Bogucki
School of Engineering and Applied Science
Princeton University
Princeton, NJ 08544
bogucki@princeton.edu
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It is with some trepidation that I offer some comments on the transition to agriculture in central Sweden. Two short visits to the region hardly qualify me as an expert. My own region of expertise lies in central Europe, and Poland in particular. Yet after listening to the presentations at the Coast to Coast conference in Falköping in October, 2002, and benefiting from the excellent conference excursions, I have several observations as a distant observer that might add to the discussion.

The Significance of the Transition to Agriculture

It has become fashionable lately to minimize the importance of the transition to agriculture, attributing its prominence in the archaeological research agenda to "western" perspectives or 19th-century ideas of "progress". This "gradualist" view is particularly marked among some British archaeologists, and I see it seeping into northern European archaeology more generally. In this view, there was considerable continuity in subsistence practices between the Mesolithic and Neolithic, despite a dramatic shift in cultural practices. The economic shift from foraging to farming is seen as drawn-out rather than rapid.

Against this view is a significant body of evidence, not the least of which includes stable isotope analyses over the past three decades that reflect a fairly sudden shift from marine to terrestrial resources in coastal foraging economies coincident with the initial appearance of domesticated plants and animals. The critique of Schulting and Richards (2002) of the

gradualist position, although presented with specific reference to western Scotland, has relevance throughout northern Europe. In their view, there was a "very rapid and complete change in the subsistence economy coincident with the earliest manifestations of the Neolithic (2002: 147)" based on their interpretation of stable isotope and dating evidence. I concur with this view and suggest that when a society made the decision to include domestic plants and animals in their economy they very quickly became the primary subsistence resources.

In my view, the adoption of domestic plants and animals is a single symptom of a whole suite of major societal transformations. These include changing ideas about:

- returns from subsistence activity (whether from hunting, collecting, or planting);
- acceptable levels of risk and uncertainty;
- ability to change their environment;
- property rights and residential stability;
- definition of kinship and residential groupings;
- benefits of more children; and
- technological innovation for things like transportation and extraction;

and many others. These changes have many dimensions, but they are cognitive shifts as much as, or even more than, they are conditioned by environment and demography. We need to understand why they took place. This means spanning the general Mesolithic and Neolithic analytical categories, although it does not avoid recognition of the fact that human society was very different at the end of the Neolithic from its condition at the beginning of the Mesolithic.

Many of these changes surely have their roots well back in the Mesolithic, since they would have been prerequisites – rather than "corequisites" – to the successful adoption of a farming economy. Thus in one sense, the transition to agriculture may be only the most visible

symptom of major long-term changes in prehistoric society. The "gradual" aspect of these changes happened before the shift in the subsistence economy rather than afterward. Whether or not agriculture was "marginal" in the economy is less relevant than its very presence, which reflects the fact that these other shifts in human society had either already occurred or were in progress. Its apparent absence may not mean that these changes were not occurring but rather that they did not manifest themselves in the dietary record. The extent to which the Neolithic world of northern Europe looks similar to the Mesolithic one is very much a reflection of the continuous nature of these changes in both space and time.

So, rather than simply studying the economic change, we have to look at the larger picture. We need to understand the nature of the social groupings that took part in this transformation not just from the perspective of ecological adaptations but also as decision-making units that made choices about their use of the landscape, their social interactions, and their symbolic behavior. It is not a question of one set of changes being slow and the others being fast, but rather studying how small-scale residential groups lived their everyday lives in very practical terms. The cumulative effects of all their small decisions resulted in the large-scale geographical patterns that are most visible in the archaeological record.

I should note that I see the transition to agriculture in Europe north of about 53°N as being different from that which occurred to the south, in what I have termed "riverine interior central Europe". In riverine interior central Europe, I continue to see population dispersal as the primary method by which agricultural communities were established between 5400 and 4900 cal BC (Bogucki 2000 and in press). Sparse indigenous foraging communities, after some initial coexistence and interaction, either retreated into refugia or were absorbed by farming society. Between 5000 and 4000 cal BC, the agricultural frontier along the North European Plain

produced dynamic societies such as the Brześć Kujawski Group that may have had a role in the eventual introduction of food production to the foragers of northern Europe (Bogucki 2003).

Above 53°N, the transition to agriculture was very much an "inside job" in which local foragers rapidly adopted the practice and ideology of farming within about a century around 3900 cal BC (Price 2000).

Units of Decision Making

Adopting domestic plants and animals requires a series of decisions, and the cumulative effect of these decisions would have produced the transition to agriculture by a prehistoric society. As archaeologists, we are interested in the units of society that made these decisions. Although individuals initiate the process of decision-making, larger entities put decisions into effect. In order to understand Neolithic society, we need to understand these decision-making units.

I have argued on many occasions that the fundamental unit of decision-making in Neolithic society was the household. The Neolithic household can be defined fairly elastically as the residential kin group that occupied a single domestic structure. No assumption is made about its composition. It may have been polygynous, and it may have encompassed more than two generations. In any given community, it may have taken diverse forms.

Viewing a Neolithic society as composed of autonomous decision-making households provides a variety of potential insights. For example, it provides a locus for innovation and at the same time for conservatism. Some households may have been "early adopters" of domestic plants and animals while others may have avoided them. The entire society did not need to "buy in" to the idea of agriculture all at once.

Beyond the spheres of technology and subsistence, the Neolithic household was also probably an important arena for symbolic behavior. Within the household, the identities of its constituent members would have been reflected in choices made about the forms of artifacts and the patterning of debris in and near the house. Externally, mortuary behavior was an important vehicle for expressing the collective identity of the household members across several generations.

The really key research problem is to investigate the primary units of decision-making in pre-farming (i.e. Mesolithic) society. I have suggested elsewhere (Bogucki 1999) that Pleistocene band society became atomized during the early Holocene into what might be called "proto-households" that display some elements of later residential groups including food preservation and storage and a close possessive attachment to particular localities. Some sense of "ownership" of the results of one's subsistence activities is a critical prerequisite for agriculture, in my view, and it would be of great interest to see whether the pre-agricultural settlements of central Sweden show an indication of such a transformation.

Frontier Households and Hamlets

The Neolithic societies of Scandinavia ca. 3900-3300 BC constitute one of the major farming frontiers of prehistoric Europe. Other such frontiers include those in the Balkans ca. 6000 BC and in central Europe ca. 5000 BC (Bogucki 1996). The term "frontier" should not be construed here as being akin to a modern political boundary. Rather, frontiers are areas in which contact and interaction among various peoples with different patterns of spatial, economic, and demographic behavior produces a dynamic social environment. Igor Kopytoff (1987: 9) terms a frontier "a geographical region with sociological characteristics," which differentiates it from a simple cultural boundary or political border.

Early farming communities in central Sweden found themselves in just such a frontier zone. It does not matter whether they were indigenous descendants of local foragers or immigrants from established farming communities in Denmark and Scania. For a period of several centuries or more, farming did not move much further north than central Sweden, and thus the first farming communities of this area were on the margin of the zone in which domestic plants and animals played a role in the economy. Considering this area in light of anthropological and archaeological studies of frontiers would lead to valuable insights, in my view. For example, Sarah Herr's recent (2001) study of the Mogollon Rim frontier of Arizona provides a good example of how an archaeologist can look at an agricultural frontier.

Population densities on frontiers are characteristically low, and individual sites are generally small, as appears to have been the case in central Sweden. It is no surprise that we do not find big Neolithic farming "villages" but rather distinct settlements that have the character of farmsteads, like Skumparberget and Skogsmossen. In Neolithic frontier societies, the household assumes a particularly important role as the strongest organizational unit in addition to being the fundamental unit of decision-making. Its developmental cycle, however, requires the addition of spouses from outside the household for it to reproduce. Thus it is necessary to form affiliations of unrelated households, however loose and ephemeral, to provide a network that yields suitable mates.

Moreover, farming households must pool their labor to overcome seasonal bottlenecks at planting and harvesting. On a farming frontier, land is abundant, while labor is scarce. Land and material wealth, therefore, are generally of lesser value than people who can serve as mates, workers, and allies (Herr 2001: 3). Multiple households must come together to carry out tasks such as harvesting. Nyerges (1992) has introduced the concept of "wealth-in-people" as a

characteristic of agricultural frontiers, in which material goods are converted to a web of personal obligations, dependence, and loyalty.

Thus the farming households in various localities across central Sweden, like their counterparts elsewhere in Europe, needed to affiliate into larger communities, not out of any need for centralized leadership or authority but simply to have access to a larger pool of mates and labor. Frank Cancian (1996) terms such affiliations of households that lack centralized authority and unified external relationships "hamlets", and it is potentially useful to see the early farming communities of central Sweden in this light. Low-density affiliations of Neolithic households without formal organization probably could be found in many different localities from Bohuslän to Mälardalen.

It should be remembered that unusual archaeological occurrences may happen on frontiers. Feral domestic livestock may result in occasional anomalous bones among faunal samples from foraging communities. Similarly, communities practicing agriculture may incorporate hunting and collecting into their economy. Wild herbivores like red deer and roe deer who rob crops may be hunted when they are drawn to fields of grain. Indigenous subsistence practices may appear in agricultural economies. A good example of this is the heavy dependence on native plants and animals by Spanish colonists in Florida (Reitz 1985).

The Watercraft Revolution

On my two visits to central Sweden, I have come away with two very striking impressions. The first is simply how much the relationship between the land and sea has changed over the last 6,000 years and the second is the fact that dates for the earliest Neolithic sites are much the same as in southern Sweden, Denmark, and even the North European Plain,

several hundred kilometers to the south, roughly 3900 cal BC. I believe that these two dimensions of the archaeological record are closely related.

The change in coastlines due to isostatic rebound is really dramatic, especially as one drives across farmland dozens of kilometers inland that was once sea bottom and visits Mesolithic sites that are now on hilltops but were once on beaches. It must have been a very watery world, particularly in the Mälardalen and in Bohuslän, but also in the chains of lakes and streams connecting them. Far from being an obstacle, water bodies were important connectors among prehistoric communities. When the weather is warm, they can be navigated with watercraft, and if it is frozen during the winter, they can be crossed by people and animals on foot. Thus unlike upland interior areas, watery regions provide opportunities for lively contacts among communities that at first glance might appear to be isolated on islands or peninsulas.

The role of watercraft in all this cannot be underestimated. Across northern Europe, the numerous finds of preserved dugout canoes suggests that it might even be possible to speak of a “watercraft revolution” during the late Mesolithic. People began to undertake purposive journeys away from their long-term residences rather than use an expedient log or raft for local purposes. In a paradoxical sense, the increased use of watercraft promotes sedentism, in that they allow the exploitation of an area far larger than possible on foot. Thus a community can remain in one location and still have access to many different resources by going out on watercraft and returning. Coastal landmarks are often very clear, and it was probably easier to move about without getting lost by boat than by moving on foot through interior forests.

The combination of ubiquitous water and the mastery of watercraft probably played a major role in the establishment of agricultural communities so quickly between 53°N and 60°N

between ca. 4100 and 3900 cal BC. Not only could domesticated plants and animals be transported (for those who doubt that cattle can be carried in boats, note that the earliest domestic animal bones in Ireland are from cattle, who needed to be brought across a substantial body of water), but households could maintain a degree of waterside residential stability that had not been possible earlier due to the need for terrestrial seasonal mobility. Such foraging communities could integrate domestic plants and animals into their economy without major dislocation to other aspects of their society.

Understanding the mechanism of the spread of agriculture does not necessarily provide the reasons for it. Whether domestic plants and animals were adopted through economic choice or necessity in the three-stage model of availability-substitution-consolidation (Zvelebil and Rowley-Conwy 1984) or whether they served as prestige gifts among pre-farming peoples (Jennbert 1985) remains unresolved. It may be profitable to explore a model in which increasing returns from domestic plants and animals supplanted other economic practices, regardless of the method of their initial introduction.

Conclusion

The principal theme of this short essay has been to suggest a few ways in which the Stone Age societies of central Sweden can be approached. These include viewing households as the primary units of decision-making, taking into account the special patterns and variability in frontier societies, and considering the interplay between waterborne mobility and increasing sedentism. These approaches are driven less by abstract sociological theory and more by practical considerations of human behavior. In the long run, I believe that such a practical approach will provide the better insights into prehistoric life and will prove more useful to future generations of archaeologists.

I would like to close by encouraging the participants in the Coast to Coast project to interpret their work in a larger picture. For example, the fact that isostatic uplift has made waterside sites available for study in central Sweden has tremendous importance for understanding the transition to agriculture in areas with drowned coastlines, such as the southern Baltic, Britain, and Ireland. As such it may provide a model system for the study of other parts of northern Europe. When considered in this light, it will be of considerable interest to archaeologists interested in the transition to agriculture more generally.

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