What time is it?
– Being Mesolithic during the Neolithic
Magnus Svensson (†)

In the county of Halland; archaeological investigations and findings amount to a picture of an early Neolithic transition, in keep with the general South Scandinavian sequence. However, in spite of a seemingly updated Neolithic material culture, the area exhibits few or even no traces of actual farming. The sites from the first half of the 4th millennium BC are rather of a Mesolithic character and their localization suggests an economy based on foraging, fishing and hunting. It may be argued that the meagre evidence in each and every case depends on bad preservation; however, the overall picture remains.

Drawing primarily on some previous excavations and a recently investigated site called Nolshögen; I suggest that the apparent changes during the time-period were not due to the introduction of farming.

Editors preface

Last year, before the decease, after a longer time of sickness, of the archaeologist Magnus Svensson from Kulturmiljö Halland, the editorial board of the In Situ Archaeologica received a manuscript from Magnus, dealing with the Neolithic in the county of Halland. After reviewing, the manuscript was returned with requests of revising some of the argumentation, as well as to clarify several aspects. Sadly, Magnus did not manage to do this before his death, the 2 December 2009. However, the manuscript contains several interesting aspects about the Neolithic transition of Halland; therefore the editorial board has decided to publish the work posthumously. As the editor of In Situ archaeological, I have made some minor revisions of the text, as well as including a discussion of the text in this preface. This has been approved by Magnus’ former employer, the Kulturmiljö Halland and by his family.

The article at hand wishes to investigate the evidence for a Neolithic transition in Halland. The main theme is to question the material culture as a bearer of economic systems. The Early Neolithic Funnel Beaker Culture, as the introduction system of agriculture in the western part of Sweden, is questioned in particular. The starting points for the argument is that without true evidence for a Neolithic economy on a local scale, we can not just accept the thought of the economical strategies changing, with the introduction
of the Funnel Beaker Culture; only because the two seem to coexist in other parts of Scandinavia, mainly in Scania and Denmark. The article is an interesting addition, to the discussion about assumptions around the interpretations of material culture, as well as the significance of the Neolithic in general. It deals with the fringe area of the Funnel Beaker Culture in Scandinavia. The article also concerns the development, or rather the presumable economical change, from the Mesolithic to the first phase of the Neolithic, in the county of Halland.

The argument in this article builds upon the thought that small shore line bound settlement sites, without house remains, as well as actual evidence for agricultural activities, should in resemblance with the Mesolithic settlements, which often are the same sites, be regarded as more suitable sites for a hunter & gatherer economy, than agricultural sites. The argument is backed up by a long known settlement continuity from the Late Mesolithic to the Early Neolithic. Hardly any changes occur together with arguments of the occurrence of certain artefacts indicating hunting, more precisely the transverse arrowheads in flint. These appear on similar sites in similar landscapes, from the late Mesolithic Ertebölle culture; a ceramic culture occurring over most of the southern Scandinavia. Mean-while no such arrowheads are found on the sites of the coexisting Late Mesolithic Lihult culture, directly north of Halland on the Swedish West Coast. They are however frequent on similar sites in similar landscape situations, on the sites of the Early Neolithic Funnel Beaker Culture, in both Halland and Bohuslän on the Swedish West Coast. Quite often it is the same sites we talk about, i.e. sites with both Lihult Culture and Funnel Beaker Culture present. In Bohuslän there are even some sites characterized as transverse arrow sites, where archaeologists debate whether the sites are non ceramic Funnel Beaker sites, or some kind of transgression phase from the late Mesolithic Lihult period, to the Early Neolithic Funnel Beaker period.

Magnus’ conclusion is that the earliest Funnel Beaker Culture presumably is a hunter & gatherer economy. This is based on the similarities in the settlement continuity; similar shore bound landscape placement; the sites are similar and often at the same location; as well as very similar artefact assemblages, pointing towards hunting and gathering. This is especially significant, as no indications of agriculture are present; other than in analogy to the existence of agriculture in other Funnel Beaker groups, further to the south.

However, he does not reject the possibility of agriculture, but since no evidence is at hand we cannot just presume there is agriculture, only because we find Funnel Beaker pottery at these sites. One argument that he misses, is that the Ertebölle Culture have had similar pottery and have also coexisted with the other groups. They were in contact with agricultural cultures on the European continent for over 500 years, without any signs of taking up agriculture. It is possible that the establishment of the Funnel Beaker pottery in the Early Neolithic, did not necessarily come hand in hand with an agricultural economy. Neither is the northern Funnel Beaker Culture, i.e. in Scandinavia, the same thing as the Funnel Beaker Culture groups of Europe. There are similarities, but also differences, both in the composition of the ceramic shape and the style; perhaps economy and settlement structure are due to local prerequisites.

Weaknesses in his line of reasoning are however, that the locality of the sites to shore bound coastal placement, does not hinder the existence of herding or small scale agriculture on adjacent shore meadows or in clearings in the surrounding deciduous forest, as Magnus seems to assume. Magnus does not directly reject it, but through his arguments he implies that he regards agriculture to be first established when settlement sites shift inland, during approximately the end of the Early Neolithic, or beginning of the Middle Neolithic. You get the impression that Magnus sees this shift in settlement structure as a necessity for establishing agriculture. This is because the location of the sites to the shore bound coastal areas is more suitable for hunting, fishing and gathering; the sites are small without any significant housing structures. The position can find some support in the existing prerequisites of the situation further to the south. However, he also dismisses the possibility of a house structure at the shore bound Early Neolithic site, Slottsmöllan in Halmstad.

However, several of Magnus arguments, pointing the Early Neolithic to a hunter & gatherer economy, can also be turned around and used as explanations for the absence of agricultural indicators. We would have liked a clarification in these aspects. One of them
is the presumably house structure from Slottsmöllan. Another is when he argues that the harsh chemical environment is the reason for the poor preservation of the bone material on the shore bound hunting sites. According to Magnus the small amount of bone material at hand, points to a hunting and fishing economy. Nevertheless, this can also be the very reason that no bones of domesticated animals have been found; especially if the herding has been of a minor input to the economy. The same applies to the lacking existence of cereals, since the same harsh chemical environment, not only gives us poor preservation of the bone material, but to all organic remains; including cereals, which are not so durable even as bones.

There are no profound comments on the fact that several of these shore bound settlements have a continuity into the middle Neolithic and to some extent exhibit finds of agricultural remains. One example is shown by Magnus. It is the site Bratterås on the Onsala peninsula in northern Halland, where there is a possibility of agricultural activities having been carried out on the site. There is also the existence of agricultural remains on the same shore bound small site. Magnus refers to the fact only as:

the distance in time between the Early Neolithic shore-bound transverse arrowhead phase at the site and some Middle Neolithic cereals is considerable

(s.16)

His viewpoint is that for a Neolithic transition to take place in this area, one would:

...expect durable settlement sites away from the shores, where farming actually was the dominating subsistence strategy

(s.17)

Magnus points out that cereal grain has been found in central Halland, which has been dated to the Early Neolithic, though not the very beginning of the period. However, the cereal was found together with ceramics, from the presumed hunting and gathering Pitted Ware Culture. Therefore it does not contribute to the discussion of the Funnel Beaker Culture as the bearer of agriculture during the Early Neolithic, in these parts of the world. He regards it as a single phenomenon, which is more interesting in the discussion dealing with the relation between the Pitted Ware Culture and the Funnel Beaker Culture; as well as to the discussion of the earliest existence of the presumed Middle Neolithic Pitted Ware Culture. None the less, as a fact, the cereal is an example of possible agricultural activities, or of import of agricultural products to Halland during the Early Neolithic. Magnus instead states that:

the content in the above mentioned pit, adds to the increasing amount of evidence that necessitates a discussion about which material culture, is associated with early farming

(s.17)

As a reader you also miss some more thorough investigations and presentations of all the material at hand, which makes the source criticism difficult to evaluate. This is a general remark, but in particular in relation to his thorough presentation of the site Nolshögén. As an example, he mentions the even spread of the Early Neolithic dates over the settlement area, but never explains what kind of features that were dated, or if these can be connected to each other in any other way. Neither is the possibility discussed, that the filling in the features is contaminated with older material, already existing on the site when the features were constructed. The objection is particularly obvious when he discusses a large hearth area at the site as Neolithic, based on the carbon $^{14}$C dates. The general picture in Scandinavian prehistory is that such areas most often date to later periods, mostly to the Iron Age; periods that are also present among the settlement features at the Nolshögén site. The features as such, are not presented any further, in the form of technical data about the shape, size or depth; with combined profiles sketches, photographs and so on. This would have made it easier to evaluate the conclusions in comparison with other data. Another thing missing is a thorough compilation, describing the total number of cereals found in the whole area of the investigation, during the Neolithic. However, myself and others, who used to discuss the period at hand with Magnus, know that he described how the only found cereal from the period, is the discussed cereal grain from Veddige, found together with the ceramics of the Pitted Ware Culture. The same lack of presentation, is also existent when he makes an important argument of how little that was found in the macrofossil analysis. This applies both to the Early Neolithic inland site Nolshögén, as well as to the very numerous macrofossil analyses, from a
large project further to the south, the West Coast Line project in Scania and south of Halland. We would have liked a full description of all the macro analysis that have been made in the whole investigation area and a comprehensive presentation of the results. Are the results from Nolshögen representative, or only a single phenomenon? Are results from macro analyses lacking, due to the fact that very few analyses have been made?

The absence of facts like these, make it difficult to make an assessment of the conclusions; i.e. there was no Neolithic farming during the Early Neolithic in Halland. Or, is the situation a result of us not being able to find any evidence, because the analyses at hand are too few, combined with poor preservation conditions.

All in all, the article is an interesting discussion of whether there is, or not, a Neolithic process in Halland during the Early Neolithic Funnel Beaker Culture. Therefore, despite the need of some clarifying notes on Magnus’ line of reasoning in this article, we have decided to publish it; hoping to start a discussion around his ideas and the topic as such. This could take the research a step forward. Enjoy the last work of the archaeologist Magnus Svensson.

The manuscript was concluded in December 2008.

Håkan Petersson
Editor
**Introduction**

As repeatedly noticed, within the archaeological discourse the term Neolithic signifies a time-period, as well as a certain kind of society; a way of life, certain habits or a set of beliefs contained within the actual time-period (Bradley 1993, Hodder 1990, Thomas 1991, 1996, Larsson 1997). Interestingly, covering vast amounts of time, the phenomenon, though regarded as generally similar over time, supposedly to a certain degree constituted by the same recurring features; did not occur synchronously over the whole area of its distribution. As an archaeologist you are familiar with the general view, as far as Europe is concerned; the Neolithic transition, spreading to begin with in a slow north-west bound direction in the Balkans and Greece, only to reach Scandinavia several thousands of years later, after some remarkable leaps and standstills (Bogucki & Grygiel 1993, Whittle 1996, Price 2000, Fischer & Kristiansen 2002, Whittle & Cummings 2007).

In the northernmost part of continental Europe and Southern Scandinavia, the initial Neolithic process, according to the conventional stance, was carried forward by people, whose material culture by archaeologists has come to be labelled the Funnel Beaker Culture (FBC). Disregarding the unanimous opinions regarding the broad chronological framework, there have been considerable controversies on events at a more detailed regional level. A major issue has long been the controversies between proponents of acculturation and proponents of models, where the first farmers were immigrants. It has been debated whether the material culture connected to FBC, occurred alongside the Ertebölle-material for some time, or whether the shift was rather immediate. Anyhow, there seems at present to be agreement that from some time during the first century of the fourth millennium and onwards, FBC is the sole adequate label, to designate the material culture of Southern Scandinavia. Regarding the West Coast of Sweden and Southern Norway it was within this framework that the Neolithic transition supposedly spread. Accordingly, occurrences of funnel beakers and, to a lesser degree, polished flint-tools have been taken to imply a Neolithic society (Boaz 1998:43pp).

Regarding the Funnel Beaker Culture, the history of research and the cultural historical framework, have previously been described and recently discussed at some depth (Midgley 1992, Andersson 2004, Gill 2003, Koch 1998:16pp, Petersson 1999, 2007, Runcis 2002:95pp, Strinnholm 2001:11pp). The concept of archaeological cultures has been thoroughly criticised, but many archaeologists choose to reproduce the term in some instrumental respect. Culture is then stated to be a mere assemblage of things that indicate a common economy, as recently discussed by amongst others, Håkan Petersson (2007:261pp). Since the proposed spread of the concerned culture, FBC, mainly remains the same as when culture meant a certain people, this approach must be scrutinized with great care. This is the case either they were regarded as biologically or socially constituted, a difference that in itself is not very clear-cut. It may actually be regarded as a most dangerous prerequisite to research; over-rating our ability to work with old entities, but then supposedly in a new sense. We cannot avoid being influenced by pre-understanding and expectations (Hodder 1999).

**Time and chronology**

The common usage of the term Neolithic is by and large two-folded. On the one hand, the term is used in a chronological sense to describe a certain period of time; on the other, as a shortening for a wide range of phenomena or features that are supposed to evolve or occur particularly frequently. These appear during a process that may coincide with the actual time-period in the first sense. However, in the later definition, the Neolithic phenomena may occur before, as well as after the period considered in the chronological sense. Very few perspectives or theoretical models are exclusive, though; most archaeologists pragmatically use the label in both senses. In a conventional sense, the Mesolithic represents gathering, hunting, fowling, mobility, lack of domesticated animals or plants (apart from dog and possible mending of hazel); while Neolithic is animal husbandry, crop-farming, decorated ceramics and ground flint-tools. The presence of a Neolithic material culture is repeatedly taken to imply farming and the two phenomena are often used interchangeably like: Traces of the first farmers... when actually, just some items dateable to the fourth millennium BC have been found.

In several instances, the way of reasoning reveals a conception where events are envisaged, as if they were influenced by something that actually took place several hundred years later. The problem is inherent in cultural
historical approaches. Events and historical processes covering considerable time are treated as moments, arbitrarily delimited as typologically defined entities. As discussed previously by for instance Karl-Göran Sjögren; typology divides and defines the concerned assemblages, but it does not give us an absolute age of single items. As long as it is used as a means to dating, the undivided flow that really constitutes historical sequence is obscured (Sjögren 1991:30).

There are, compared to Denmark and Scania, in general few radiocarbon dates from previous excavations on Neolithic sites in Western Sweden. Yet another problem is that many older dates should be abandoned, since they are methodologically flawed. Today, for instance, we know from experience that you cannot date several pieces of charcoal together and use the mean value, since you have no idea whether the pieces were contemporary. The outcome is a value, but the concerned feature or event, is not dated. Such dates should be singled out and dismissed, they were and they remain, worthless. The value of accelerator mass dates from small amounts of charcoal or macro-fossils, determined to species, cannot be overestimated.

More seriously, a lot of old misunderstandings regarding radiocarbon dates still abound. Magnus Andersson, in his dissertation, draws attention to a discussion where the Early Neolithic period is supposedly prolonged, when calibrated dates are used (2004:43). This is not the case and the matter is since long settled (cf. Renfrew 1976:76pp). Non-calibrated radiocarbon dates give a mere value – perhaps a bit unfortunately expressed as years BP. Today it should be clear, though, that the unit “radiocarbon years” is not equal to calendar years and as such does not tell us the age, unless it is calibrated. The Neolithic period has, if we take the archaeological period for granted for a moment, always had the same duration, though archaeologists until recently were unable to know.

I will now turn to some evidence from Halland in particular. Evidence of a Neolithic economy, during the first half of the fourth millennium is weak, in spite of a material culture that may be regarded as – Neolithic. It is possible that farming was introduced to the area and that the economy may have been of a Neolithic character. Such an interpretation, however, rather depends, to a main part, on circumstantial reasoning and analogies from other areas. The lack of evidence of farming and a fully Neolithic economy in Halland, necessitates argumentation ex nihilo. The evidence there is, actually indicates a quite different situation than the one in Denmark and Scania.

Halland during the first part of the fourth millennium

The area of Halland during a loosely defined Late Mesolithic Period between 5000 and 4000 BC is, possibly due to little research, often characterized as a transition zone between the more well-defined and well-researched inventories of Ertebölle to the south and the Lihult-culture to the north (Jennbert 1984, Sjögren 1991, Nordqvist 1997a, Klassen 2000). Later, from the beginning of the fourth millennium BC, Halland is regarded to be within the sphere of the Funnel Beaker Culture, if this entity is defined as an assemblage of things. Not that the particular items necessarily dominate the find-material, but they were obviously at hand. During the onset of the fourth millennium, as well as in the rest of Southern Scandinavia, the settlement-structure in Halland is supposed to become more dispersed; but at the same time the single sites were more permanently used. The change towards a more sedentary way of life is supposedly due to a change towards a Neolithic societal and economical structure. Per Persson has suggested a system where shore-bound and non shore-bound settlements were established during the Early Neolithic in western Sweden. He emphasises the limited importance of farming but states that:

the social-economic base of the society still was of a Neolithic type

(my translation, Persson 1991:175)

Bengt Nordqvist, in his survey of the sites on the Swedish west-coast (Nordqvist 1997b:103) furthers the model by Persson, which has not been challenged. Results from Western Scania (Andersson 2004) lend some weight to Persson’s model as a general and probable one; but, as mentioned, evidence is scarce from Halland, as well as from further up north, along the Swedish West Coast.

In Halland most excavated sites from the first part of the Early Neolithic were shore-bound during their time of use. They are characterized by cultural layers containing an abundance of transverse arrowheads and sometimes also huge amounts of ceramic vessels.
In Halland the sites at Slottsmöllan (Westegaard 1998a), Mursjökulle (Jonsäter 1984, Källström 1996) and Tröingeberg C (Carlie 2004) may be regarded as typical. If we are to interpret these sites from a utilitarian point of view as the result of subsistence, the localization at shores, close to estuaries and river-mouths rather suggests an economy based on foraging, fishing and hunting. This pattern is not in keep with what one would expect, if farming were introduced to any serious extent.

Previous to the excavation at Nolshögen (see below), the character of any substantial inland-site from the first half of the fourth millennium in Halland was unknown. Some inland-sites giving evidence of activity during the centuries between 4000 and 3500 BC have previously been touched upon within contact archaeological projects, but often just as single features that happened to give a radiocarbon date to the period, or as a few finds within sites dominated by remains from other periods. Some excavations have yielded rich ceramic finds from a few pits, but not much else to give away the character of the site.

Transverse arrowheads

Transverse arrowheads are typical to the South Scandinavian Ertebølle-sites, but are not common to Western Swedish Lihult-sites (Sjögren 1991). So, if we characterize the concerned sites by the transverse arrowheads, they share this trait with the South Scandinavian ones from the last part of the fifth millennium. The particular instances discussed here occur, during the fourth millennium, however most frequently north of the area previously dominated by Ertebølle-inventories. In Halland, as well as further up the Swedish West Coast and in southern Norway, the use of these shore-bound sites peak (interpreting available radiocarbon dates and the rate of accumulation at face value), during the first half of the fourth millennium. The differences between the Late Mesolithic and the Early Neolithic sites are subtle, since they in all respects
remain localized in the same manner. At some sites there is evidence indicating a continuous or repeated use, during the last centuries of the fifth and the first of the fourth millennium. There have not been any house-remains identified at any of the sites.

If the sites in southern Norway and the northern part of the Swedish West Coast are compared to the ones to the south, in Halland, like Slottsmöllan and Tröingeberg C, there are some differences that may be explained in terms of geography. The rate of the change in the sea level and the regional topography, ruled how long each site was available (or favourable). The steeper the slopes and the faster the sea withdrew (or the land rose), the shorter time the sites were shore-bound. Generally the sites to the north, accordingly, were used for shorter time and the accumulation was lesser. The apparent differences between sites within Halland, are to some degree source-critically explained; probably rather due to the time spent on the excavation and how large share of the total site, that was excavated at each place. Some differences, though, must be due to in what kind of wider societal setting the sites were established and used. We may thus expect chronological as well as regional differences. At a detailed level, contemporary sites lying close to each other may have been utilized in different ways. To the concerned people, they have taken on different and alternating meanings during any given period of time. This particular kind of site has as of yet not been thoroughly investigated or discussed; accordingly, profound differences may be concealed beneath their apparent similarity.

Bengt Nordqvist has briefly discussed the concerned type of sites from the late Mesolithic and the Early Neolithic in Western Sweden, excavated by the National Heritage Board up until the mid 1990’s (1997a:43pp, 1997b:100pp). He refers to Mats Jonsäter’s (1984) opinion that the occurrence of transverse arrowheads is contemporary with the introduction of a Neolithic economy. According to Nordqvist, the oldest phase is instead the final part of the late Mesolithic, a view that finds support in some radiocarbon dates. From Halland, radiocarbon dates from the late Mesolithic are however few. Dating the introduction of the transverse arrowheads at sites that were continuously used is difficult. This is because later settlement remains from the Early Neolithic are easily confused with older remains, as most sites appear as open layers. There is as usual a problem in tying the single pieces of dated charcoal to the intended event.

One of Nordqvist’s examples is particularly revealing to my discussion, since the site in question, to begin with was regarded as late Mesolithic, with a radiocarbon analysis suggesting a date at about 4000-3800 BC. The same site was later defined as belonging to the FBC/transverse arrowhead complex at the onset of the Neolithic (Nordqvist 1997: Figure 4:16, 4:17, 103-104). The beginning of the Neolithic is not well defined. We constantly deal with a slight shift in meaning between the Neolithic as time and the Neolithic as content. The difficulty to single out the Neolithic from the late Mesolithic activities is, of course in itself, a sign of noteworthy continuity that should attract some attention.

Looking at some evidence further north, from the island of Hisingen outside Gothenburg, the result from the excavated site Torslanda Raä 107 indicates a shift in material culture, during the last centuries of the fifth millennium. In a homogeneous flint-assemblage, typical Lihult-artefacts were few in numbers while blades and micro-blades were numerous. Transverse arrowheads were totally missing. Charcoal from a hearth was radiocarbon dated to 5485 ± 60 (Ua19267; at 2 sigma 4460-4230 cal BC). The date may, according to the excavator, indicate an approximate time for the final phase, before transverse arrowheads appeared (Swedberg 2005). Dates from the nearby site Björlanda Raä 297 are shown in figure 2, as Bj 297 a and b, at the bottom of the graph. At this site, there actually were some transverse arrowheads, however few. Accordingly, the dates are from a later period and may thus be from the onset of the particular phase discussed here. Another instance is Skrea Raä 191, where a cultural layer contained a huge flint-material with 37 transverse arrowheads, as well as core-axes, two Lihult-axes and a flake-axe of Havnelev-type. Charcoal from a pit that cut through the layer (and thus was of a later date) was dated to 5260 ± 70 BP (at 2 sigma 4260-3950 cal BC, Westergaard 1998b). The site Amhult, Torslanda Raä 110, is a clear indication of a significant rise in the number of transverse arrowheads at single sites, during the onset of the fourth millennium. 626 transverse arrowheads were encountered on this site (Filipsson, Olsson & Swedberg 2005). Furthermore, 179 transverse arrowheads were found at Bratterås on
Radiocarbon dates from the fifth and the fourth millennium, from some of the shore bound sites mentioned in the text. References are given in the text.
the Onsala peninsula (Westergaard 2004). Relevant radiocarbon dates from these later sites are shown in figure 2 (as Amhult To110a-f and Onsala, Bratterås a-b respectively).

In southern Norway, the earliest instances of these particular sites during the final part of the Mesolithic have been labelled Phase 4 or Kjeøy (Glørstad 2004, 2007). The later sites of this type with funnel beakers and polished flint-tools (or rather flakes from polished flint-tools) are regarded as Neolithic. Within the recent Svinesund project, some of these typical transverse arrow sites were investigated. At Berget 2, eleven transverse arrowheads were found, as well as parts of a funnel beaker, but none of the radiocarbon dates were in keep with the expectations (Tørhaug 2002). At Torpum 13, ten transverse arrowheads and two tanged points were found (Jaksland 2003). The largest number of arrows from a site without ceramics, with a notably late and accordingly uncertain radiocarbon date, was collected at Torpum 10, where 86 had transverse edges and 31 were one-edged. Two tanged points were found as well (Glørstad 2003). At Vestgård 8, twenty-five transverse arrowheads were found, but there are no radiocarbon dates (Johansen 2004a). The localities Vestgård 3 and 6, clearly display the increasing number of arrows at single sites after 4000 BC are. At Vestgård 3, 85 transverse and 21 one-edged arrowheads were found, together with 8 tanged A-points and shards from several decorated ceramic vessels (Johansen 2004b). The excavation at Vestgård 6, generated 458 transverse and 146 one-edged arrowheads. There were also 27 tanged points of type A and shards from ceramic vessels (Jaksland & Tørhaug 2004). The increasing number of transverse arrowheads is not due to an overall increasing amount of flint at the sites, since arrowheads successively constitute a greater share of the total inventory, as well. We thus face a sequence similar to the one on the Swedish west coast.

At this point, we may consider the possibility of dating these sites with the aid of the changing sea level and the withdrawing shoreline after the post-glacial transgression. The method depends on the supposition that the settlements have been shore-bound, thus creating a pattern where the later settlements are found at lower levels than the earlier settlements. In spite of some minor discrepancies, the method seemingly generates relative dates, compatible with radiocarbon dates. There have been attempts to refine the chronological accuracy, but the method is with necessity a bit crude, sometimes probably due to the size of the sites and difficulty to find and delimit the actual settled area (Persson 1991, Åkerlund & Nordqvist 1997, Pässe 2003, cf. Munkenberg 2007). Interesting as this is, the question emerges; if people were farmers and depended on arable fields, why did they move so eagerly with the shore?

Evidence for a Neolithic settlement structure

First of all we would expect the earliest Neolithic settlements, to be successively further inland and to remain in use, throughout the Neolithic. However, settlement sites have a shore-bound locality and in some instances we also find the succeeding phases at the same sites (Persson 1991). One of them is the site Bratterås at the Onsala peninsula in northern Halland (Westergaard 2004). Nevertheless, the distance in time between the Early Neolithic, shore-bound transverse arrowhead-phase at the site and some Middle Neolithic cereals is considerable. Regarding what is published, it is as of yet hard to judge whether this particular site was continuously settled during the entire period.

Radiocarbon-dates from some of the above-mentioned sites are shown in figure 2. There is seemingly a bias, due to the fact that there are many dates from a few excavations. The picture is not seriously altered, although by using only the median value from each site, it would actually put an even greater emphasis on the centuries between 4000 and 3600 BC. A few dates are from food-crusts on ceramic vessels, but they are not the earliest date at each site. Dates from the Norwegian sites are from charcoal or burnt bone; all dates from Amhult are from charcoal. It is obvious that radiocarbon dates give a better idea of the chronology, than typological dating, which would merely wind up in just two entities; the Late Mesolithic or the Early Neolithic I. Whether the sites were in use continuously or seasonally, or perhaps repeatedly with hiatuses, people kept returning to them during several generations. The sites must have been an integrated part of a settlement system and they were no less durable, than any permanently settled inland-sites. Unfortunately, due to the acid soil in Halland, we
are mainly left without any preserved bones. The few small pieces of burnt bones that have been recovered are from cultural layers; since they have not been directly dated, their association with the rest of the material at every site remains uncertain. If anything at all should be made of the small amounts of bone, it is that when they occur they do indicate an economy oriented towards hunting and fishing. This is in accordance with what one could expect, just looking at the localization of the sites.

Other circumstances than purely nutritional ones, though, like the possibility of fast communication, may have made a shore-bound establishment favourable. Exposure to the sea may have been advantageous, but must not necessarily imply a heavy reliance on marine resources. As more indirect signs of the Neolithic transition, however, I would prefer to expect durable settlement sites away from the shores, where farming actually was the dominant subsistence strategy. We would expect to find, if not in abundance, at least serious numbers of harvesting and manufacturing tools like sickles and millstones. We would expect sheen, or use-wear, on sickles or knife-edges from cutting silica-containing stalks. During the first five centuries of the fourth millennium, though, the sites in Halland are instead characterized by the total lack of such implements.

There are a few early dates on actual cereal grains from Halland. One of them is from an excavation just outside Laholm, in the early 1990s. This particular grain could have been very interesting indeed, since it gave one of the earliest direct dates (Beta-71658, 5200 ± 60 BP) to evidence of farming from the Swedish mainland (disregarding whether it was harvested locally or not). However, it was not determined as to species and was obviously found out of its original context, in a posthole from an Iron Age-house. Therefore it is of limited value. At the site, a concentration of Early Mesolithic flints was found, as well as a broken Late Neolithic dagger and a Middle Neolithic, hollow-edged adze, made of diabase. No other finds or features from the Stone Age were identified (Viking & Fors 1995).

Colleagues have also drawn my attention to some recently reported excavations from the middle part of Halland, where cereal grains were actually dated to an early part of the fourth millennium BC. An occurrence with bearing to the discussion regarding the relation between farming, funnel beakers and pitted ware vessels, is a radiocarbon-dated wheat kernel (Triticum cf spelta/dicoccon) from Veddige along the river Viskan in central Halland. The grain was found in a soil-sample from a small pit that also contained a few ceramic shards, a flint flake and a piece of burnt flint. The scorched grain was dated to 4750 ± 50 (UA27592; cal. 2 sigma 3640-3490 and 3460-3370 BC, Ryberg 2006). This is quite an old date in a Western Swedish context, but what is really interesting, is that the grain was found in a pit with ceramic vessels of pitted-ware type.

The shard with incised lines from Veddige is actually one strong indication of early Pitted Ware-vessels in Halland. The date from the pit is from a scorched grain, which is a kind of material that is without any, at present known, methodological errors; though of course, the association between the dated grain and the ceramic shard may be questioned. The date is in agreement with the dates on food-crusts from the Pitted Ware-vessels mentioned above (terrestrial δ¹³C-values). These came from Olas (Persson 2000, 2005, 2007), situated just a few kilometres to the west of Veddige, at a level corresponding to the supposed Early Neolithic sea-shore. The dates from Olas have previously stuck out as too early, but this opinion may have to be revised. Anyhow it is noteworthy that one of the earliest direct dates on wheat from Western Sweden is associated, not with funnel beakers, but with pitted ware vessels.

In my opinion, though, the content in the above-mentioned pit, adds to the increasing amount of evidence that necessitates a discussion about which material culture, is associated with early farming. Thus, we face a situation where FBC in parts of its distribution, was not very Neolithic; while the one Neolithic culture, which by almost everyone has been regarded as dependant on hunting and fishing, the PWC, occurs with cereal crops.

To summarize, the typical site from the first half of the fourth millennium in Halland, displays evidence of fishing and hunting. Though the material may be heavily biased due to our means of excavation (Clarke 1978:7pp), the sea-bound character of the groups inhabiting the Swedish West-coast and southern Norway, during the first half of the fourth millennium, remains obvious. Evidence of other kinds
of settlements from the early part of the fourth millennium, is mainly missing. There are no serious differences between the character of the Mesolithic sites and of the Early Neolithic sites. The known inland-sites were small, but in continuous use from the fifth millennium until the end of the fourth. We do not know whether people stayed at these different sites all year round, or if they are traces of mere temporary gatherings. At most of the sites just stone, flint and ceramics are preserved. Bengt Westergaard has laconically caught the problem concerning Skrea Rä 191:

The intensive flint-knapping at the site did not generate significant amounts of archaeo-botanical material (my transl.; Westergaard 1998b:150)

However, later, during the centuries around 3300 BC, substantial inland-sites appear, at the same time as there is evidence of a shift in the material culture at the shore bound sites as well. New interpretations to throw light on the discussed topics can be drawn from an excavation undertaken during the autumn of 2006 in Veddige parish, called Nolshögen (Veinge Rä 334).

Nolshögen

In the wider landscape the site Nolshögen is situated some ten kilometres from the coast in a gently undulating terrain. To the southwest and northwest, we face some of the densest concentrations of recorded Neolithic sites and finds in all Halland (Björk 1987, Svensson 2006). Part of the settlement was found during test-excavations on a plateau, close to the side of a 12 metre deep and 500 metre wide valley, extending in a north to south direction. Torrents must have shaped it during earlier ages, quite different from the small stream, which today finds its way along the valley-floor. At the foot of the eastern slope, close to where the stream flows into a larger brook; the other part of the settlement was found (figure 3). Interestingly, there was evidence of a continuous use of the upper, as well as the lower part of the site, during the end of the fifth millennium, as well as recurrently during the fourth. Confirming a general pattern in western Sweden, there seems to have been a certain hiatus during the centuries around 4000 BC. Of almost 40 relevant radiocarbon dates that might have been from the period, just one gave a value corresponding to the centuries between 4000 and 3700 BC. As usual, there was a certain bias in the collection of the samples, which were chosen for dating purposes. The selection of the charcoal was based on questions, concerning matters that did not belong to this particular phase. Most of the features, though, could have generated any Late Mesolithic or Early Neolithic date and the number of analysed samples, therefore lends some significance to the distribution of values.

Of twenty-four analysed soil samples, only three of them contained macrofossil plant remains; hazel-nut shells and pine cones. The lack of cereal-grains may, as usual, depend on poor preservation, or pure chance in what we investigated; unless they simply were not present. Charcoal was abundant, though; a total of 8 samples were dated to the centuries previous
to 4000 BC; while 22 different samples were dated to the period between 3900 and 2900 BC (figure 4). The importance of the results in the present discussion lies in the even spread of the values. It may be noted that the youngest dates previous to 4000 BC, are from hearths. A feature called A8368 was dated twice (charcoal from birch and lime respectively), to avoid the risk of drawing too far-reaching conclusions relying on a single radiocarbon date. Both A8368 and the other late Mesolithic hearth were situated in the ravine; A8368 was actually situated in the middle of the cultural layer that contained a substantial part of the Neolithic findings.

The even distribution over the settlement area of the features, which were dated to the Early Neolithic phase, indicates that a huge part of the settlement had been in use. Thus, as a site, Nolshögen must be described as a large one, probably covering several hectares. The brook had heavily eroded the settlement at the valley floor and its original extent is unknown. On the plateau, several hearths that were dated to the centuries between 3700 and 3400 BC, as well as a small longhouse, give evidence to the permanency of the activities. One of the hearths was found in a pit within the limits of the longhouse (figure 5), but otherwise these features were not connected to any obvious house or structure from the period. The hearths may have been used on different occasions, but still within what may be considered as one larger settlement area. The numerous pits indicate repeated activity; the primary purpose of the single feature, though, remains as usual hard to determine.

**Artefactual observations**

Finds were scarce and the flints amount to just 620 worked pieces, weighing about 1 500 grams. Flakes and waste dominated the assemblage and few regular tools were found. A few items were made of high-quality flint, but most pieces were struck from small glacially transported boulders. This kind of raw material is typical of Halland, the bulk of worked flints from the Stone Age in the area are of similar provenience. Ceramic vessels were also few, a significant share was from just two vessels that were found as concentrations of shards in the layer on the valley floor. The vessels were made of a coarse ware with a smoothed, leather-like surface. None of them could be reconstructed to
full size, their original shapes are uncertain, since the shards were heavily eroded and deformed. Anyhow, there is, when compared to other dateable finds from Halland, little doubt that they were Early Neolithic funnel beakers. Some other ceramic shards were dis-integrated to such a degree that they could neither be collected, nor securely determined to type. These vessels must have been fired at a low temperature, even if a harsh chemical environment probably had affected them as well.

A few key artefacts may be dated with some accuracy, but regarding most of the flints, there is no way to distinguish the late Mesolithic from the Early Neolithic material. This, together with defined features, can perhaps imply that the character of the settlement and the activities at the site were the same during both the fifth and the fourth millennium. If it were not for the radiocarbon dates, there would have been little possibility to distinguish the late Mesolithic presence, from the Neolithic.

Flint-tools and flint-flakes from Nolshögen were analysed regarding use-wear, by Anders Högberg at Malmö Kulturmiljö (Högberg 2007). The analysis indicates that several different tasks were carried out. No difference between the finds from the plateau and the finds from the cultural layer at the valley floor could be established. In part this was because not very many edges had identifiable wear. The wear that was identified, was from scraping hides, cutting meat or possibly fish, bone work and in one instance from contact with wood. No sheen from cutting cereals, or the like, was identified. Had the flint-edges been in contact with silica-containing plants, it would probably have been noticed, since this type of wear forms quite rapidly and is highly lustrous (Högberg personal comment; Knarrström 2007:102).

**Nolshögen and the Neolithic**

Five transverse arrowheads were found in a small pit that was dug within the part of the settlement, situated on the floor of the ravine. Charcoal from the pit was dated to $4610 \pm 40$ BP (Beta-198031; with 87 % confidence 3520-3330 cal BC). This indicates a late occurrence of transverse arrowheads of this particular kind, made of flakes with retouched concave sides. The pit had been dug into the subsoil through the cultural layer, surrounding the hearth A8368. The flint material from the pit was homogeneous and no signs of disturbance were observed. Since the date was the youngest from this particular part of the excavated area and there were no other transverse arrowheads found in the immediate vicinity, the dated charcoal and the content of the pit may be regarded as closely related. Nolshögen differs from most previously excavated Early Neolithic sites in Halland, in the number of features on the site, especially hearths. The results are noteworthy since Neolithic hearths, confirmed by radiocarbon dates at previous excavations have been few and far between. (In the instance of Nolshögen, all dates are from AMS-analyses on charcoal.) Previous attempts to date hearths, even at sites with an abundance of Early and Middle Neolithic finds, have more often than not given results indicating later activities, during the Bronze and Iron Ages. The large size of the site in its entirety should also be emphasised. Due to the extension and oblong shape of the investigated area we were able to discover both a house and the hearths on the plateau, as well as the cultural layer on the valley floor.

Nolshögen was obviously a kind of settlement site previously not excavated in Halland. Whether this general scarcity is real, or depends on similar remains previously having remained undetected, is hard to determine. The site differs from the shore-bound sites, mentioned above, with transverse arrowheads, where hearths are few. As mentioned above, an opinion furthered by amongst others Persson (1999:162), is that the number of inland-sites increased and became more permanently settled during the Early Neolithic. The occurrence of these kinds of sites would imply farming, since they occur at a time when farming supposedly is introduced. The change in subsistence, from a Mesolithic procurement-strategy depending on marine resources, to a Neolithic food-producing strategy, can explain the changing settlement pattern. Nolshögen may have been the type of permanent inland settlement that Persson has suggested. We should however note the strong presence at the site during the final part of the fifth millennium and that there is seemingly no great divide between the Mesolithic and the Neolithic activities. Nolshögen was a node in an ancient cultural landscape already previous to and during the onset of the Neolithic. We found no mill- or grind-stones, no sickles, nor any other signs of harvesting or processing cereal crops.
Discussion

Results from pollen analysis have for a long time been an integrated part in the discussion regarding the earliest farming in Southern Scandinavia (Jennbert 1984, Welinder 1998). Interpretations drawing on pollen-analysis are in abundance. Still today, they are the backbones in many arguments concerning the presence of an Early Neolithic farming society; although they are of limited value to the questions we are concerned with here. I will not discuss the results from all the pollen-analysis in depth, but merely refer to previous papers on the problems involved and the difficulties to interpret such data (Persson 1998, Sjögren 2003, Björkman 2009). It is, regarding Halland, a simple fact that there is no pollen-analysis with convincingly dated layers that indicates farming during the fourth millennium.

The archaeobotanical evidence from an area to the south of Halland may be of interest. The results have recently been published, from the archaeological project the West Coast Line, by the National Heritage Board UV Syd, in South-western Scania. These may be compared to the evidence hitherto discussed. Very few substantial signs of actual farming were found, neither in soil-samples analysed for macrofossils, nor in pollen-analyses from wetlands and bogs close to the investigated Neolithic sites (Regnell & Sjögren 2006). The conclusion is that something must have gone wrong when sampling and the results are totally dismissed – since we supposedly know that farming was established during the period. One may wonder; why invest that much research into investigating something, which is so well known that when contradictory results are at hand, they are discarded? The authors seem reluctant to seriously ponder over whether the results may be mirroring a real situation; meaning that domesticates actually may have played a minor role in subsistence. How come? I can only find one plausible explanation; it is because these were Neolithic times and during that period, if funnel beakers were indicated, the concerned people should be farmers.
In a recent paper by Kristine Beate Johansen (2007), two of the above-mentioned sites from the Svinö sund project, Vestgård 3 and 6, are discussed. According to previous interpretation, farming was introduced to the south-eastern part of Norway, during the first centuries of the fourth millennium. As Johansen shows, such an interpretation depends on a long line of reasoning that must be regarded as circumstantial, without dates and finds to support it. Possibly, the decline in elm-pollen frequency is dated, but the rest is mere speculation. Again, it is obvious how features that do not belong together have previously been treated as a synchronous Neolithic package. Events from the earliest Neolithic were connected to megalithic graves, dated to several hundred years later (neither must these with necessity be accompanied by farming, even though it may be probable that they were). Johansen’s conclusion is that, in spite of funnel beakers and polished flint tools, there is no evidence of farming in the south-eastern part of Norway at the time earlier proposed; i.e. the first part of the fourth millennium. This is in accordance with previous research concerning southern Norway, where apparent variability regarding the relative importance of food production is stressed (Prescott 1996, Boaz 1998:48pp).

As I have tried to show, today we know, thanks to radiocarbon dates that some previously referred evidence actually post-dates the concerned time-period with several hundred years. We must abandon the misconception of a Neolithic, where almost half a millennium is treated as an instance and even early Middle Neolithic evidence is brought into the discussion regarding Early Neolithic events. There may very well be a systematic association between the dolmens and passage graves of Southern Scandinavia and cereal crops. However, there is no evidence of megalithic graves until, at the earliest, the middle of the fourth millennium (Dehn & Hansen 2006, Sjögren 1998, 2003). This particular grave custom is accordingly not inherent in, or explained by the Funnel Beaker Culture, since the one could exist without the other. Notwithstanding the role of long barrows; funnel beakers existed for perhaps as much as half a millennium before the first megalithic graves were raised. The phenomenon is accordingly irrelevant to any discussion regarding the first centuries of the fourth millennium BC.

To sum up; in my opinion, there is really no evidence that excludes a Neolithic economy during the fourth millennium in Halland, but — and this is my main point — neither, are there any substantial positive evidence to a Neolithic society. The shore bound sites may very well have been temporary hunting- and fishing-sites, within an otherwise Neolithic society. However, there are not many traces of such a varied societal system, with coastal locations suitable for hunting and gathering, together with farmsteads in agrarian environments. Permanent inland-settlements may be envisaged but, again, Nolshög and Stafsinge are the only inland sites so far and we did not encounter any signs of farming at either of the sites.

As Persson states (it is some years ago but the evidence has not seriously been altered):

Up until now there is no direct or substantial evidence that farming was practiced in the area, during the early and middle Neolithic.

(Persson 1998:77-78, my transl.)

In this case, the concerned area is in particular the large island of Hisingen on the Swedish West Coast. However, it is obvious from the line of reasoning that a greater part of western Sweden is concerned. Repeatedly, authors claim that the yield from farming and cattle herding, initially played a minor role and contributed to subsistence to a small degree. How likely is the presence of a Neolithic society and economy if we cannot find any signs of it? There are remarkably few signs of either farming or of a shift in settlement pattern. Thus, there are few signs of a different societal organisation, during the period called the Early Neolithic in a large part of Southern Scandinavia.

The very definition of the Early Neolithic Funnel Beaker Culture as farmers, depends on Danish and North-European finds. If sites from the western or the middle part of Sweden had been excavated previous to the Danish ones, we would perhaps have dealt with a different definition and division. In my opinion, we can expect any group of people; however we define it, to rather hastily switch between different modes of subsistence or economy to survive or to benefit. It is also possible for any group of people to participate in the exchange of certain things, or to adopt a particular material culture without profound changes in societal organization.
The point I have been trying to make, is that the awareness of the time period may actually be an obstacle to our interpretations; it may prevent investigation of the excavated material in its own right. The cultural historical approach, where farming was carried out by a people labelled the Funnel Beaker Culture, has not really been abandoned or replaced by explanatory models, substantiated by current anthropological or sociological frameworks. I have contested the supposed homogeneity of the groups living in Southern Scandinavia during the fourth millennium BC and I would like to stress possible regional deviances. I do not doubt that farming and cattle herding may have been the main nutrition source, from the onset of the fourth millennium, in parts of Denmark and parts of Southern Sweden. What I have pointed at is a different, quite complex, situation along the Swedish West Coast and in Southern Norway.

From my line of reasoning I would like to stress two implications. There never was any homogeneous all-embracing Funnel Beaker Culture during the Early Neolithic of Southern Scandinavia. Similar vessels and flint-tools may have occurred in culturally and economically quite disparate settings. There were obviously contacts between groups. Any single group of people or individual may have travelled far. Affinity or division, though, may have cut through our materially defined entities in quite an unexpected way. The other implication is the non-existent relationship between Funnel Beaker Culture and Pitted Ware Culture. Different groups of people have departed, co-existed and merged in ways not necessarily shown by any present division of the material culture they left behind. Funnel Beaker Culture may seem a useful abstraction to account for a complicated situation. In my opinion though, a far too excessive use of the abstraction, blurs the actual historic sequences. To make the different trajectories during the fourth millennium BC intelligible, we must scrutinize the evidence from each and every region as the unique outcome of unique historic situations.

Before I finish, I must make a statement about some crucial concepts that occur in my discussion. I do recognize the need to substitute the labels the Mesolithic and the Neolithic (Jennbert 2005). Part of my aim is really to point at the problems involved, when delimiting time and historical process by using these denominations, for the concerned periods of time. However, in the present paper I have used them and when I did, it was in a conventional sense. To discuss time and chronology and to make my point understandable, I do recognize the power of conventional language; accordingly I used the two labels as convenient reductions. In the long run though, as well as many others, I find it urgent to substitute these labels with more well defined entities, regarding chronology and historical sequence.

I have addressed how time is conceived and treated by archaeologists. In my opinion a lot of confusion lies inherent in the very term the Neolithic. Since it signifies a time, as well as a lifestyle and a certain economy, it is all the more confused since post-processual archaeology brought in the suggestion that the Neolithic should be regarded as a conceptual shift and a new way to comprehend the surroundings (Thomas 1991, Larsson 1997:97pp). The meanings have become intertwined to such a degree, that it is very hard to establish in which sense the one, or the other are used. Thus my question concerning what we really do mean with the Mesolithic and the Neolithic. Was it possible to be Mesolithic during the Neolithic, or were people with necessity Neolithic, regardless of lifestyle, if they lived during the fourth millennium BC?
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