Baltic Prehistoric Interactions and Transformations:

The Neolithic to the Bronze Age
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Preface

This publication has its starting point in a seminar series on *Maritime Chiefdom Societies* that was initiated at Gotland University by me in collaboration with Dr. Paul Wallin in 2005. This research initiation was graciously supported by *Riksbankens Jubileumsfond* (RJ) in 2006. The support has been vital to the invitation of researchers from near and far to participate in the seminars. Issues on social governance in prehistoric island societies remain in focus, and the development and changes in the prehistoric society on Gotland and its connection to the regional areas around the Baltic Sea has become of special interest to this research. We have focused on the long-time perspectives both concerning the variability of the material expressions and the landscape changes, especially targeting the Neolithic and Bronze Age time frames. During autumn of 2008 we invited colleagues to a special Baltic Rim Seminar called “*Baltic Prehistoric Interactions and Transformations during the Late Neolithic and Early Bronze Age Societies.*”. They have been investigating these time frames in general and also looked at specific insular and coastal locations in the Baltic Sea Region.

To understand more about the dynamics behind the variability of the prehistoric material expressions seen, I suggest that it is important to carry out both local studies concerning a limited time frame and to study contextual long-term perspectives. Several of the papers in this publication investigate the dynamics of the ritualized landscape represented by graves and their relationship to the living/domestic landscape and vice versa. A focus is set on local issues of transformations during the Late Neolithic to the Early Bronze Age, but regional issues and interactions that have formed and transformed the societies are also touched on. Several of the papers discuss the dynamics of change and variability in the societies from a socio-cultural and environmental perspective.

Perspectives on variability and change of the prehistoric material expressions during the Neolithic and Early Bronze Age involve four of the larger islands in the Baltic region and include Gotland, Öland, Åland and Saaremaa. Today these islands belong to three different nations. The former two belong to Sweden, Åland has semiautonomous status but belongs to Finland, and Saaremaa (Õsel) belongs to Estonia. In the past there were however other “alliances” and interaction networks, which are indicated by the various prehistoric material remains found on these islands and the surrounding mainland coastal stretches. Cultural influences beyond these insular and coastal regions can also be seen in the material remains. Local and regional similarities are found in the area we now call Scandinavia or the Nordic countries and the Baltic State countries, but there are also differences due to varied natural and cultural settings.

To gain deeper insight into these matters it is very likely that we have to start collecting and analysing data at the local scale while using contextual approaches. Subsequently, this should be incorporated in a broad scale analysis and discussion. The latter is not a one person task but, needless to say, should involve research teams.
This publication is an attempt to present and analyse what has transpired in the Baltic Sea area during a time of transformation. Substantial changes can be noticed, but the discourse regarding the Neolithic and Bronze Age societies in Scandinavia/the Nordic countries has generally come to centre primarily on South Scandinavia and external contacts to the south. Contacts and relationships to the east and north have also been discussed mainly concerning the Mesolithic and Neolithic time frames.

The papers by Strömberg and Anderberg on the Åland Bronze Age and Lang’s paper on Estonia present interesting and necessary overviews. A large number of investigations have been carried out over the years and it is now essential to gather and evaluate the data and conduct new analyses and targeted research excavations. Due to the various political obstacles and language difficulties in late historical times it has been difficult for Scandinavians to access and share data from the Baltic States, Belarus, Russia and Poland and most likely the other way around as well. New investigations tied to contract work due to infrastructural changes have rendered much new data on the prehistory of Scandinavia. The papers by Papmehl-Dufay concerning Öland graves and Alexandersson’s paper on the settlement/ritual places in Småland as well as Karlenby’s paper on pottery in the well are examples of this. The papers by Papmehl-Dufay and Wallin investigate the variability in grave form during the Neolithic. The research on these islands has been greatly overshadowed by the Neolithic Pitted Ware research and Late Iron Age remains. In the paper by Wehlin, the Baltic Sea interactions and possible “meeting” places and material expressions in the form of Stone Ships Settings are discussed as an expression of these interactions. Runesson touches on special sites as “meeting” places of these interaction networks. She furthermore discusses the numerous large Early Bronze Age burial cairns on Gotland and that these may not be an indication of a more complex society developing on Gotland since the settlements found did not clearly indicate a stratified society. The large Bronze Age cairns on Gotland are also discussed by Martinsson-Wallin with particular focus on these being part of a ritual landscape that goes beyond their use as burial places.

The various papers give a good overview and foundation for further research regarding the transition from the Neolithic to the Bronze Age in the Baltic Sea area. We are grateful for the support of Gotland University and Professor Nils Blomqvist for making this seminar possible within the Baltic Sea Seminar Series which is supported by the Swedish Institute and the Visby Program. The majority of the papers that were presented at this seminar make up this publication.

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Helene Martinsson-Wallin
The Early Bronze Age in Estonia: Sites, Finds, and the Transition to Farming.

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Abstract—Main archaeological sites and finds of, and the transition to farming subsistence in, the Early Bronze Age in Estonia are discussed. Known settlement sites are few in number and they can be divided into two groups: Late Neolithic sites, which still stayed in use, and new sites founded since the Early Bronze Age. Late stone axes and a few bronze items (mostly axes imported from Scandinavia) constitute the main groups of artefacts. Material culture in general is poor and lacks guiding forms; the phenomenon is labelled as the ‘Epineolithic culturelessness’. The location of sites and stray finds, as well as the pollen evidence from lake and bog sediments indicate a remarkable settlement shift to the areas suitable for primitive agriculture, i.e. the first agricultural landnam.

The aim of this article is to analyse archaeological remains of the Early Bronze Age in what is today Estonia. This period has typically been regarded as the prehistoric period with the fewest number of sites and as a result has been largely neglected by researchers. In addition, the article also aims to understand the development mechanisms, the driving forces behind the processes, and all of the changes that resulted in the transformation of the Neolithic foraging society (which to some extent already had characteristics of a primitive farming economy in certain regions) into an advanced Late Bronze Age agrarian society in coastal Estonia. Another aspect of the problem at hand is why inland regions of Estonia failed to reach the same developmental stage at that time. The article is based on my recently published monograph about the Bronze and Early Iron Ages in Estonia (Lang 2007).

Settlement sites

A small number of settlements constitute the main presently known sites dating to the Early Bronze Age (c.1800–1100 cal BC); in addition, there are also some very first fossil field remains reported but no burials or hoards. Our limited knowledge of the material culture of the period hinders considerably the identification of settlement sites. It has been assumed that in the second millennium BC people made and used the same ceramics, flint, quartz, bone, and horn items as they did in the Late Neolithic.

In the Late Neolithic (3200/3000–1800 BC) three pottery styles – Late Combed Ware, Corded Ware, and Early Textile Ceramics – were manufactured in Estonia. At present it is unclear whether some other form of Corded Ware, developed later in time, was still used during the second millennium BC. Hille Jaanusson (1985, 46–47) claims, for instance, that Late Corded Ware, in her terminology ‘Villa-type ceramics’, spanned the periods I and II of the Bronze Age. The first AMS dates of carbonized organics taken

1 As the fossil fields mostly belong to the later periods, they are not treated here (but see Lang 2007, 95 ff.).
from the surfaces of the Textile Ceramics reach from the second quarter of the third millennium to the beginning of the second millennium cal BC (Kriiska et al. 2005); however, textile impressions were also used to finish pottery in the Late Bronze and Early Iron Ages, suggesting that this kind of processing method was used in the intermediate period, that is, in the Early Bronze Age. As for Late Combed Ware, the latest dates come from the end of the Neolithic (Lang & Kriiska 2001, 92).

On the other hand, it is still unclear when the ceramic styles characteristic of the Late Bronze Age (1100–500 BC) started to develop. The AMS dates for the Asva-style coarse-grained pottery from the Joaorg fortified settlement in Narva indicate the 12th and 11th centuries BC; the so-called Lüganuse-style ceramics emerged at roughly the same time, that is the 12th–9th centuries BC (Lang 2007:27 pp.). According to some indirect observations (Lang 2007, 20), one can assume the development of that kind of pottery already several centuries earlier. It means that there is reason to believe that some of the sites commonly dated to the first millennium BC may actually originate from an earlier period.

Early Bronze Age settlement sites (Figure 1) can be divided into two groups based on their cultural and geographic contexts. A quarter of a century ago (Jaanits et al. 1982, 130) archaeologists could only name Early Bronze Age settlement sites that were established in the Neolithic and which supposedly continued to be used later in time (e.g. Akali, Kullamägi, Villa, Kääpa, and Kivisaare). It was observed that all the settlement sites, usually located near a lake or the mouth of a larger river, contained a small amount of ceramics that typologically originated from the Neolithic, but, considering the above-mentioned factors, could actually have been manufactured during the Early Bronze Age.

The past decades have, in fact, brought to light new data on some settlement sites of another kind. In comparison with the above settlements, the total area of such sites was considerably smaller and the cultural layers were extremely thin and less intensive or seemed to be absent altogether. These settlement sites were no longer located on the shores of large waterbodies, but were situated in places where the arable land and pastures were suitable for primitive farming. One such settlement was located at Assaku near Tallinn and yielded two radiocarbon dates on the borderline between the Stone and Bronze Ages. The findspot of the Järveküla bronze axe (see below), which also revealed some pieces of quartz and pottery sherds with rock-debris temper, was also apparently a small settlement site. In addition, features characteristic of a settlement site such as a fire place, ceramics, flint, and bones were present near the findspots of some late stone axes. Because these types of features are difficult to discern in the archaeological record, they usually remain unnoticed and unrecorded and are rarely studied.
The Early Bronze Age settlement sites are strikingly similar in character to the type of settlement site that emerged in Estonia during the period of the Corded Ware Culture. This is true not only of the second but also the first group of sites, as the finds of the latter also indicate very small or short-term settlements established at the location of a previous settlement, rather than being continuously settled. Similarly, most Corded Ware settlement sites were very small and their cultural layer was rather thin with few artefacts, including some ceramics and stone and bone items (Lang 2000a:62 pp.; Kriiska 2000). In addition, the Corded Ware and the Early Bronze Age settlement sites are linked in regard to their geographical locations on the landscape.

The appearance and increasing prevalence of small settlement sites with a thin cultural layer during the Late Neolithic and Early Bronze Age is a phenomenon that can also be seen in the southernmost East Baltic region. The phenomenon was accompanied by a settlement shift, in the course of which people increasingly settled in areas suitable for
primitive agriculture. At the same time, the older fishing settlements on the shores of larger lakes and rivers were gradually deserted (Loze 1979, fig. 2; Vasks 1994:65 pp., fig. 36; Rimantienė 1999; Grigalavičienė 1995, 21). Settlement sites in Finland also became considerably smaller in the Late Neolithic and Early Bronze Age. However, these new settlements in Finland, particularly inland sites, were often established in areas suitable for foraging subsistence (Lavento 2001:137 pp.). Additionally, the absence of large settlement sites and an increase in the number of dispersed settlements can be observed in central Sweden beginning in the Late Neolithic. This is in contrast to southern Sweden and Denmark where the first larger farming villages emerged during the Late Neolithic (Burenhult 1991:11 pp.).

Thus, the general picture of Bronze Age settlement sites in Estonia is similar to that of our neighbours. Following from this, one can assume that trends in the development of settlements and economy were also rather similar. These commonalities included smaller and obviously more mobile settlement units than previously, and increasing experimentation with farming. In addition to pollen diagrams indicating human manipulation of plants, the above trends are supported by the locations of the new settlement sites, which were characterized by suitable soil rather than waters rich in fish or good hunting grounds.

Late stone axes
The majority of stone axes found in Estonia that date from the Late Neolithic and Early Bronze Age are isolated finds, with a few exceptions that were found in settlement sites. These axes have a simpler morphology (oval, triangular or drop-shaped) than that of boat axes. Some axes, however, have close parallels to ones found in adjacent regions, particularly in Scandinavia.

Five-cornered axes (with several sub-variants), 30 in number (Figures 2; 3: b) ², have been distributed across the eastern Baltic region as far north as Finland and are associated with the influence of the central European Lusatian Culture (Meinander 1954:79-80.). In Scandinavia, five-cornered axes have mostly been found in eastern and southern Sweden, with some in Denmark, but none of them can be dated through the context of their discovery (Baudou 1960:49 pp., pls. IX–X, map 30).

Rhomboid axes with sharp faces, 12 altogether (Figure 3: a; Lang & Kriiska 2007, fig. 3), have been dated to the later Bronze Age in both Scandinavia and Finland. Some axes of this type have been found in the complexes of periods V–VI in Denmark, and some others discovered in Finland have been dated to the Late Bronze Age according to the context of their discovery, either with respect to changes in sea level or other nearby archaeological sites (Baudou 1960:50 pp.; Äyräpää 1938:890 pp.; Meinander 1954:70 pp). The few Estonian axes – all isolated finds – cannot help to date them more exactly.

² The total number of each type of stone axe was calculated by Kristiina Johanson.
According to Äyräpää (1938, 893), the rhomboid axes found in Estonia were imported from Scandinavia.

Figure 2. Five-cornered stone axes. 1 Holoh-hainja at Senno, 2 Krivski at Irboska (Iz-borsk) (AI 3361; 3591).

Axes with recurved butts, five in number (Figure 3: c; Lang 2007, fig. 7) are mostly isolated finds, except for one. The latter was an incomplete specimen, and was found in the lowermost horizon of the cultural layer of the fortified settlement at Asva on Saaremaa Island; its find conditions suggest an association with period IV, at the latest. As stated by Äyräpää (1938, 892), the Estonian axes in question were manufactured in Scandinavia or northern Germany.

Compared to axes mentioned above, simple shaft-hole stone axes were mass-produced, and were mostly made on the spot. Two hundred and twenty eight such axes (plus a number of small fragments) have been found in Estonia so far (Figures 4; 5). This is a rather small number compared to Latvia (e.g. Vasks 2003:28), or Lithuania (Juodagalvis 2002), not to mention the thousands of axes found in the counties of central Sweden (Cederlund 1961, 74). The shape of the axes varies everywhere but it is usually rhomboid, oval, triangular or drop-shaped, or something in-between. As all the differences seem to be morphological and not functional, geographical, or chronological, and represent, at least partly, the axe in its final stage of use (e.g. Lekberg 2002, figs. 5.4–5.6), then all the axes can be treated as a uniform group. It is believed that the simple shaft-hole axes had appeared by the end of the Neolithic, although few have been recovered from Late Neolithic settlement sites in Estonia. The date obtained from this wood fragment was 3060±85 BP (1430–1210 cal BC), (Kriiska 1998). The fragments of the late shaft-hole
axes uncovered at the fortified settlement sites of Asva and Ridala can be dated to the beginning of the Late Bronze Age with more certainty than the axes from other locations.

Figure 3. Distribution of late stone axes with foreign characteristics (composed by K. Johanson). (a – rhomboid, b – five-cornered, c – with recurved butts, d – undetermined type.)

Figure 4. Distribution of simple stone axes (a) and axes of undetermined type (b) (composed by K. Johanson).
Late stone axes have been found in all parts of Estonia (Figures 3; 4); their distribution is somewhat more concentrated in the Võrtsjärv region, the Pärnu River basin, the islands and northern Estonia. The general view is that the Neolithic boat axes in all their varieties were first and foremost ritual, status, and prestige items that served as symbols of power and were often placed in the grave to be used in the afterlife. Simple shaft-hole stone axes, on the other hand, were mainly used for cutting bushes and trees and for the cultivation of the soil (Østmo 1977:186 pp.; Vasks 2003). Experiments conducted with similar axes showed that they were indeed suitable for cutting, but the traces of wear and tear indicated contact with much heavier materials than wood, for example, with stones that could be found in the ground (Østmo 1977:186 pp.). Considering the spread of the shaft-hole stone axes mainly in agricultural areas, it seems more likely that they were first and foremost used for soil cultivation (perhaps the first tillage) and deforestation, which involves both cutting down trees and breaking the turf; though other uses cannot, of course, be ruled out. The possibility that some of the axes served as ritual items, as they had previously, and indicated one’s status, prestige, or group identity must also be considered. Examples of such axes include, first and foremost, all the imported axes, ones manufactured more carefully than usual, and axes that could not be used as tools because their shaft holes are too small, for instance.

The earliest metal artefacts
Altogether 17 bronze artefacts dated to the Early Bronze Age are preserved in Estonian museums: 15 axes\(^3\) one sickle and one spearhead; ornaments are completely absent. Like

\(^3\) In addition to the above items, there is data regarding two narrow-bladed flanged axes, which did not reach the museums.
the majority of late stone axes, the bronze artefacts are also either isolated finds or of uncertain provenance (Figure 1).

The 17 axes can be divided into three morphological types. Eight axes belong to the group of flanged axes, seven of which represent narrow-bladed, ‘high-flanged axes of class C’ as described by Vandkilde (1996:107 pp., :223) (Figure. 6: 2, 4–5). Such artefacts were manufactured in southern Scandinavia/northern Germany during the Montelius period IB (i.e. 16th century BC). The seventh axe, found at Tahula on Saaremaa Island, and characterized by a wide halberd-like blade and low flanges (Figure 6: 3), was also likely made in that region. According to Vandkilde (1996:101 pp, 211), such axes (called ‘waisted flanged axes of Virring type’) were made and used in the Montelius period IA (17th century BC). In the countries that lie to the east of the Baltic Sea, the flanged axes described above are reported only from Estonia; in Finland they are absent (Meinander 1954:19), and the corresponding axes in Latvia and Lithuania represent slightly different types (Graudonis 1967, pls. XXIII: 4, 6–7, 9, 11; XXIV: 12–13).

There are seven palstaves (Figure 6: 1) that belong to a group of axes widely distributed in Scandinavia during Montelius period II (Montelius 1991 [1917], figs. 850–853; Olde-
berg 1976, figs. 196, 248). A unique socketed axe from Järveküla (Figure 7: 1), still has no exact parallels; it should, however, belong to the group of so-called nordische Streitbeile by Aner (1962:180 pp., figs. 6–8), and also has rough similarities with some specimens from Södermanland in Sweden (Montelius 1991 [1917], fig. 878; Oldeberg 1976, fig. 2724). Judging by its general proportions, the shape of the blade, and the decoration motifs, the Järveküla axe was most likely made somewhere in Scandinavia during period II of the Montelius. One additional socketed axe was recently found in Eesnurga, central southern Estonia (Figure 7: 2); it is likely that this relatively long and slender axe was produced in southern Scandinavia at the end of the Early Bronze Age (Lang et al. 2006).

All axes found in Estonia appear to originate from west of the Baltic Sea, the sickle from Kivisaare and the spearhead from Muhu Island demonstrate the different paths of exchange. The former has come from what is today the Ukraine, the latter (Figure 8) from the area of the Seima-Turbino Culture near the Ural Mountains (Jaanits et al. 1982, 132).
This culture is dated to the 17th–15th centuries BC, but it could even be some centuries older (Lang 2007, 40, footnote 26).

One can conclude that all of the above-mentioned bronze artefacts were made in the earliest Bronze Age (periods I and II), while there are no specimens known from period III, and new imported goods do not appear again until late in period IV. It seems that the era of relatively active contacts between Estonia and Scandinavia during the Late Neolithic (beginning in the Corded Ware period) and Early Bronze Age was followed by a ‘less active’ period in the last quarter of the second millennium BC. The situation was the opposite in Finland, for example, where the majority of imported metal goods belong to periods II and III, but are almost unknown in period I. In Latvia, too, the Scandinavian influence seems to have become stronger in period III, as one can infer on the basis of both imported goods and multi-layered burial mounds in Reznes, Kalnieši and elsewhere (Lõugas 1985, 53). The number of bronze artefacts from period III is much greater than that of earlier times in both Latvia and Lithuania; this situation may be at least partly explained by the advent of local metalworking.

Figure 8. Spearhead from Muhu (AI 1047).

**Pollen diagrams**

In addition to the small number of sites and numerous isolated finds, pollen diagrams of lake and bog sediments may reveal evidence of Early Bronze Age settlement areas. Clear signs of human activity reshaping the environment were already present at the beginning of the Neolithic. At several locations this change is also correlated with the first sporadic evidence of cereal cultivation (Veski 1998; Kriiska 2003, tab. 1), whereas farming indicators became stronger only at the end of the period, in c. 2200–2000 BC (Veski & Lang 1996a–b; Saarse et al. 1999). A significant increase in human impacts during the Late Neolithic was followed by a subsequent decline at the beginning of the Bronze Age. The periods of decline in activity were dated differently in different areas and they were followed by a new increase either at the end of the Early Bronze Age or at the beginning of the Late Bronze Age (see e.g. Saarse et al. 1999; Veski & Lang 1996b; Pirrus & Rõuk 1988; Poska et al 2004; Laul & Kihno 1999; Kihno & Valk 1999).

Thus, the character and extent of human impacts differed in various regions and times. An important characteristic is that the periods of major human impact were rather short
and were replaced by periods of decline; decrease in human impact in some places was followed by a rise in other regions. As the pollen diagrams reflect the environmental changes only in the vicinity of sampling sites, the situation seems to indicate considerable instability, at least in regard to the location and use of arable land; settlements in general were likely impermanent. One can assume that people continued to look for better and more suitable places for farming. The character of settlement and economy, and the respective reflections in pollen diagrams, were basically the same in southwestern Finland, Latvia, and Lithuania at the time (see Lang 1999:367-368).

The first landnam

The above-described trends in the character of finds, sites, and the development of settlement and economy, which had begun by the Late Neolithic, are characteristic of a process called the first landnam. Economically, the process involved gradual transition from foraging to farming subsistence and, in terms of settlement history, it resulted in a settlement shift from the coasts of larger water bodies (rivers, lakes and the sea) to places suitable for land cultivation and pastoral farming. Both economic and settlement patterns co-existed in the Late Neolithic, whereas the settlement type based on hunting and gathering alone had almost disappeared by the beginning of the Bronze Age.

To date, the settlement shifts that occurred during the landnam from the Late Neolithic until the Early Bronze Age have been researched in detail only in northern and southern Estonia. In the former area the settlement located further away from the sea coast was established during the Corded Ware period the finds of which are usually located near the glint (gliff) zone, in rendzina (Est. loo; Swe. alvar) soils, and away from larger water bodies. In the morainal inland areas where the soil is thick and difficult to cultivate, the later shaft-hole axes prevail (see Lang 2000a:75pp.; 2000b, fig.). Thus, the first landnam spread from the glint zone inland.

Settlements of the Corded Ware period in southern Estonia (see Johanson 2005) continued to be positioned, in many cases, at the same places where previous hunting-gathering settlements were located. However, new areas better suited for farming had already been put into use by that time. Simple shaft-hole axes are rarely uncovered near the old settlement centres of hunter-gatherers; they primarily come from areas that were put into use in the Late Neolithic or even later. This means that the earlier centres were deserted by the beginning of the Bronze Age at the latest. The general trend was that first the coasts of large water bodies and the river mouths entering them were deserted, followed by the abandonment of river forks. New settlements were first established in flat areas (predominantly in the foothills), and the heart of the uplands was settled only afterwards, throughout the Bronze Age.

As for both north and south Estonia, one must stress that the areas where the farming settlements would become permanent later (i.e. in the Late Bronze Age and Early Iron
Age) were gradually put into use already during the first landnam. Small Early Bronze Age settlement sites with few finds indicate that the sites were used for short periods of time and that a limited number of people inhabited them; the population at such sites likely consisted of single households. The pollen diagrams show that small plots and headlands where mainly wheat and barley were grown (oats were probably considered a weed) were also temporary and only used for brief periods of time. This type of primitive, limited, and mobile slash-and-burn agriculture can be called dispersed cultivation. Definitely it was not the only or the main means of subsistence in the Early Bronze Age. Lake and bog sediments suggest pasture farming (i.e. stock rearing); hunting, fishing and seal hunting in coastal areas was also likely practised. On the other hand, it must be stressed that the increasing need for suitable arable and pasture land was the most important factor influencing the location of and search for new settlement sites.

The first landnam and the transition from hunting and fishing to farming in general was a remarkably long process. It took 2500 years in northern and western Estonia and up to 3500 in central and southern Estonia from the emergence of Cerealia pollen in the diagrams until the establishment of societies where the main means of subsistence was agriculture. The situation is similar in other countries on the eastern coast of the Baltic Sea; farming societies were established in Lithuania, Latvia, and Finland during the Late Bronze Age at the earliest, and even then not in all regions (e.g. Antanaitis 2001; Antanaitis-Jacobs & Girininkas 2002; Zvelebil 1993). It is commonly held that such a slow transition to farming can be explained by unfavourable climate and the plentitude and availability of alternative resources for hunting and fishing. Both explanations are obviously valid to a certain extent, but they are insufficient for understanding the whole process.

The long and gradual transition period provides indirect evidence that the process involved local populations, not in-migration of farming tribes. The fact that the development of a new dispersed settlement pattern was accompanied by the abandonment of the old settlement centres of hunters-fisher-gatherers, suggests that the occupants of the new areas were local, and supports the above claim (see Lang 2000b). On the other hand, the long transitional period involved a specific type of economy – complex fishing-hunting or the ‘Forest Neolithic’ economy (Zvelebil 1993, 157), which presumably fulfilled the subsistence needs of the small and dispersed population in the best possible way.

The transition to farming, which was a much more labour-intensive lifestyle than foraging (Sahlins 1974; Cashdan 1989) and yielded results after a longer period of labor (see Zvelebil 1993 and the literature cited), was not the consequence of economic difficulties (e.g. famine due to the lack of game, fish, seals) as generally thought before. Rather, the transition can be explained by the social needs and behaviour of the society at large, the significant factors here being social competition between the leaders of the society, trade of prestige items, and the manufacturing of grain-based alcoholic drinks to be consumed at (religious) celebrations and upon entering into various alliances (see e.g. Bender 1978;
Sahlins 1974:149 pp.; Jennbert 1988). It can be assumed that the transition to farming, which was the best way to obtain additional resources, was more rapid and complete in regions where the social contacts both within and between the communities were closer and the competition between the leaders was more fierce because of the need to maintain such relations. The small size and low density of the population in Estonian and other areas on the eastern coast of the Baltic Sea during the third and second millennia BC explains why the above social needs and behavioural patterns did not develop here, at least not to the same extent as they did in the southern latitudes. It was the crucial absence of the social engine that determined a slower pace of economic growth.

**Society and culture**

As noted, the material culture of the Early Bronze Age was rather meagre; very few settlement sites are known and graves seem to be completely absent. It is not possible to highlight any specific ceramic, flint, quartz, or bone items characteristic of the era; only stone axes are numerous. Metal was rare and could be found only in the form of imported finished products. The so-called Epineolithic culturelessness—absence of any expressive archaeological culture—which originated at the end of the Neolithic and deepened during the Early Bronze Age, is a region-specific phenomenon, as the situation in the neighbouring countries differed significantly. What was the reason for the absence of any prominent material culture in Estonia?

One of the reasons for the lack of definitely recognizable archaeological culture could have been a small and highly dispersed population. Low population density did not encourage the exhibition and manifestation of material wealth or social relations due to the lack of social interactions (including competition). As for pottery, a direct link seems to exist between, on the one hand, the quality and richness of ornamentation, and on the other hand, the size and density of settlement units; when the concentration of settlements increased considerably and social communication intensified, people started to pay more attention to small details such as the decoration of ordinary household pottery. The quality of pottery declined when social interactions decreased or when people wanted to disguise their relations (see Braun 1991). It is reasonable to assume that the above also applies to some other manifestations of material culture, first and foremost phenomena of artistic expression. All Neolithic cultures of the eastern Baltic region, which are primarily defined through pottery styles, reflect much larger social units than the single households.

The absence of a clearly defined culture in Estonia during the Early Bronze Age is illustrative of one of the main concepts in archaeology—the archaeological culture. To briefly summarize, despite serious criticism the early studies tended to associate archaeological cultures with ethnic (language) groups and considered differences in material culture to be the manifestation of ethnic differences (see Lang 2001 and the literature cited). Today it can be claimed that the essential prerequisite for the development of
'archaeological culture' was not ethnic peculiarity but the existence of a sufficiently dense social network. Obviously it is impossible to define what 'sufficiently dense' means, but it is clear that the sparse single household pattern dominant in Estonia during the Early Bronze Age was insufficient for such interaction and the development of a distinct or expansive archaeological culture.

Another issue for consideration is why the larger social communities split into small units during the transition to farming. It was not the case all over the world, but it is characteristic of various regions of northern Europe. Although the Estonian and Scandinavian ethnographic parallels show that slash-and-burn agriculture was a one-family activity, and that even one person could manage it (Manninen 1933:8; Kortesalmi 1969:298-299.), it cannot be the reason for the division of communities because a larger number of people working together would have done the work more efficiently. It is the far reaching character of slash-and-burn agriculture that may have favoured the emergence of dispersed settlement; when the soil became exhausted after some years people were forced to look for new plots and, therefore, a small group of people needed a rather large land base. Soils suitable for primitive farming were not found in plots sizeable enough to feed larger groups of people.

In addition to the above economic geography-related factors, the driving force behind the development of a dispersed settlement pattern was a gradually deteriorating situation surrounding land ownership concerns. In other words, despite the fact that work was done individually, collective ownership relations had prevailed up to this point in time, and tension over who owned and had the right to use slash-and-burn fields and the grain they yielded arose. Ownership relations have always been significant to the development of farming societies; the larger the social community, the more authority needed to regulate relations within it. As for the single household pattern, the problem was easy to solve as the fields belonged to those who had cleared the land. In the Early Bronze Age this probably meant that the individual had rights of use rather than actual private ownership of the cultivated land, and it is reasonable to assume that after the arable land was deserted it again became communal property. The main trend seems to have been that of a transition from communal ownership to individual, that is, the ownership was transferred from kin groups or tribes to single households.

Low settlement density and small settlement units does not preclude the presence of communication or linking networks between such dispersed populations. Marriage networks, kin relations, the organization of communal events (bigger fishing, hunting and trading trips or religious festivals), political alliances, and a common past and traditions all linked the settlement units within a certain region. On the other hand, when interpreting the scarce Early Bronze Age material of the region, social stratification and power of chiefs cannot be ignored. The most convincing pieces of evidence for social stratification are imported items that indicated social prestige.
Conclusion

Although the sites dating to the end of the Neolithic and especially the Early Bronze Age, remain poorly known in Estonia, one can still claim that significant changes in society, economy, and settlement occurred during this thousand-year period. We can only speculate about the slow changes that occurred, but such opinions can be logically derived by comparing data from the Late Neolithic and Late Bronze Age, which have a larger and more diverse amount of material known than does the Early Bronze Age. The changes that took place were protracted, but also inevitable, considering the existing (and ever-changing) circumstances. The result was the development of an early agrarian society in the coastal zone by the end of the second millennium BC and inland many centuries later.

The economic essence of the changes was a transition from foraging to farming, although a mixed economy is characteristic of the period as a whole. People had begun to experiment with farming by the Middle Neolithic, and the final conversion took place inland during the first millennium BC. An important development during the final Neolithic and Early Bronze Age was that suitable arable and pasture lands started to determine the location of settlements. Another significant process that accompanied the change in the structure of the economy was the settlement shift, the so-called first landnam. This was the most extensive and important settlement shift between the development of the first settlement network of hunter-gatherers and the urbanization process of the 19th and 20th centuries. During that period, areas that would become the location of farming settlements in the following centuries came into use for the first time. The changes in economy and settlement patterns gave rise to social changes; though it would be even more accurate to say that the above spheres all changed at the same time and influenced each other. The main social change was the split of foraging communities into smaller settlement units, which were probably not bigger than a single household. The lengthiness of the development processes can be explained by their own inner logic. Sparse settlement pattern consisting of small units was insufficient to create the critical mass needed for a rapid transition to production or development of a new and well-defined material culture. Estonia remained a distant margin for the cultural centres of the Bronze Age located in southern Scandinavia and the south-eastern coast of the Baltic Sea during the Early Bronze Age.

References


A Research Overview and Discussion of the Late Neolithic and the Bronze Age on Åland

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Abstract - Based on archaeological evidence, it is suggested that the Archipelago of Åland has been colonised since c. 5000 BC and settled by sedentary groups since the mid-Neolithic c. 2500 BC. These groups survived on what the land and the sea could provide and archaeological data indicates that seal hunting was especially important. It is doubtful that agriculture was ever of a permanent nature or a major source of subsistence on Åland during the earlier settlement phases. The sub-Neolithic subsistence pattern is suggested to have continued during the Bronze Age, which is indicated by finds of remains from the Kiukais culture, a hunting and gathering culture with only a few elements of agriculture, which has been found in both Neolithic and Bronze Age contexts on Åland and in Finland. It is also a possibility that seasonal hunting groups from different parts of the Baltic Sea, existed side by side with the permanent population for shorter or longer periods. Evidence from archaeological data concerning the transition from the Late Neolithic to the Bronze Age society on Åland is sparse and to date this period has attracted little attention. In this paper we aim to examine and shed light on this period in the prehistory of Åland.

Introduction
Åland is situated just south of the Golf of Bothnia in the centre of the Baltic Sea in-between East Sweden and South West Finland. It constitutes a multitude of islands and form the archipelago that stretches out towards the East and the Finnish mainland (Figure 1 and 2). Today Åland belongs to Finland and has a semi-autonomous status, but pre-historic and historic cultural affiliations both to areas of South West Finland and East Sweden are clearly seen. The first people who came to Åland c. 7000 years ago (Stenbäck 2003:32) were probably seal hunters and, according to archaeological evidence, they belonged to groups from the so called Combed Ware culture from the East. These were groups who used pottery with Comb imprints, but lived as hunters and gatherers, a so called Sub-Neolithic subsistence pattern. Around 1500 years later, c. 4500 years ago, the first influence of the Pitted Ware culture from the West is indicated on Åland (Stenbäck 2003, Storå 2001).

When the Neolithic settlement Jettböle in Jomala parish was first discovered and investigated in the early 1900s, it was a small sensation. Prior to this finding it was not considered likely that it was possible to live on Åland during the Neolithic. Since then, around 50 - 60 Stone Age sites have been found. Many of the known sites have rendered rich materials, and a few studies concerning that period have been carried out (for example, Stenbäck 2003, Storå 2001, Martinsson 1985).
Jettböle is the most well-known Pitted Ware site on Åland, and it was excavated already in the beginning of the last century and re-excavated in the late 1990’s (Cederhvarf 1912, Storå 2001). Besides finds on Åland, remains of the Pitted Ware cultural groups have been found at coastal locations in areas stretching over Southern Norway, Denmark, East Sweden and Gotland Island, but on mainland Finland remains tied to this culture have only been found at a few sites, e.g. at the settlement of Rävåsen in Kristinankaupunki (Laulumaa 2002).

The Eastern ties are very clear during the earliest colonisation and settlement phase and when the ceramic styles change in Finland they also change on Åland. This might indicate that the Åland islands during the earliest settlement phase were used as hunting stations for seal and sea-bird on a seasonal basis, by hunter-gatherer groups from the Finnish mainland (Martinsson 1985). During the mid-Neolithic and onwards, influence both from the East and the West is evident on Åland (Martinsson 1985). Towards the end of the Neolithic period, around 4000-3500 years ago, influence from the eastern Kiukais culture is indicated on Åland.
The vegetation is also indicated to have been less varied than on mainland Finland during these early times, but from 3500 BC there is evidence of forests including trees like hazel and oak and also the beginning of the formation of small lakes or wetlands in the inland. The most common bird in the Ålandic archaeological material is Common Eider (Somateria mollissima) and ducks (Mannermaa, 2008, Núnez 1986). The most common bone remains found are from seals, and seal hunting probably provided the basic food source during the early settlement history, and probably the reason why man initially colonised these small islands.

Calculations show that during the Combed Ware-culture phase (c. 4000 B.C.) the total land mass of Åland was 25 km², towards the end of the Pitted Ware-culture phase (c. 2000 B.C) the landmass had extended to 350 km² and at the beginning of the Bronze Age (BA) to about 500 km² (Figures 1 and 2, with sites mentioned in the text). This dramatic change in landmass is of course very significant when discussing the prehistory of Åland.
This paper intends to give a brief presentation of the archaeological data from the Neolithic and the BA sites on Åland and will discuss the transition from the Late Neolithic (LN) to BA in this area. This includes LN sites belonging to; the Pitted Ware culture (c. 2500 - 1800 B.C) and the Kiukais culture (c. 2000 – 1500 B.C), and the EBA (c. 1500 – 800 B.C.) and LBA sites (c. 800 - 400 B.C.). We will also raise questions concerning the traditional view on a stratified society and whether it can be applied to Åland during this time.

**The Neolithic times on Åland**

**The Pitted Ware culture**

**Jettbøle** (Jo 14.1), Jomala parish is a large Pitted Ware settlement that can be divided into two phases: Jettbøle I (c. 3300 – 2600 BC) and Jettbøle II (ca 2700 – 2200 BC). Combined, the site covers a time frame from the Early Mid- to the Late Neolithic (see for instance Götherstöm et al 2001:5 and Stenbäck 2003:181pp). Large amounts of pottery, tools and flakes made of Ryholite, (a local Porphyrite) and a considerable amount of bones have been recovered from this site. On the youngest site, Jettbøle II, quern stones have also been recovered. Agriculture, on the other hand, has not been proven by pollen analysis, which could indicate imported grain from what is now mainland Sweden. Only one human burial has been recovered on Åland from this particular site. The body was placed in a flexed position, a tradition known from Pitted Ware sites on Gotland. A recent $^{14}$C dating places the burial between 1690 and 1450 BC (3285 ±45 BP) during the transition from LN to BA. The $^{13}$δ gave a value of -18.5, indicating a higher amount of terrestrial food sources than the other human bones recovered at this site. Fragments of human bones from some fourteen individuals have been recovered from this site. There are also bones of dog and pig in the material (Götherstöm et al 2001:pp, Storå 2001:66-67). Jettbøle is however most famous for the clay figurines found here, at least 60 different figures have been recovered from this site. This is a feature not known from Swedish Pitted Ware sites and is probably an eastern influence (Cederhvarf 1912, Norrback 1998:98pp).

**Glamilders** (Sa 20.8), Saltvik parish is a Pitted Ware settlement with agricultural finds, e.g grain *Hordeum Nudum* dated between 2880 and 2610 BC (4145 +/-35 BP) has been recovered here. At this site and on the site of Smikärr, rectangular hearths have been found. This type is uncommon in Pitted Ware sites in Sweden, but a similar find was discovered on the Hemmor site on Gotland in 1995 (Wallin and Martinsson-Wallin 1996:13, 20). On the Glamilders site, several of the hearths lay on the same axis, and next to these rectangular hearths, circular hearths were found. This might indicate different functions, or different periods (Meinander 1962, Norrback 1998:98).

1 Lab nr: Ua-21512, Find no: NM 5907:1144-32, Calibrated date received with OxCal 3.10
2 Lab nr: Ua-35045, Find no: ÅM 726:4548, Calibrated date received with OxCal 3.10
Another Pitted Ware settlement is Åsgärda (Sa 34.20), Saltvik parish, which dates to the later part of the Neolithic period. The majority of the ceramics was of a Pitted Ware-type, but sherds of Kiukais pottery and furrowed ceramics were also recovered. Teeth of cattle were recovered at the same level as the Pitted Ware pottery. Fragments of clay figurines have also been found here (Storå 1995).

The investigated Pitted Ware sites on Åland show that primarily seal bones have been recovered. Other meat resources have been cattle, elk and pig, but finds of the latter is sparse. This indicates that domesticated animals were known and used at this time, but not to a great extent. At some sites elk bones are more common than pig bones. The material indicates many similarities between Åland and the rest of Scandinavia during this time in prehistory, but also several individual traits, whose origins must be sought outside the Pitted Ware culture, either as eastern influences or as local traditions/regional adaptations.

The Kiukais Culture
Towards the end of the Neolithic phase, influence from the eastern Kiukais culture is found in the archaeological material on Åland. This culture group, as well as the two cultural groups mentioned above, are defined by their pottery style and the typical trademark for the Kiukais culture is textile imprints on the bottom of the ceramics. This was probably a result of the pots being placed on textile to dry before they were burnt in a kiln (Norrbäck 1998:109, Meinander 1954a). The main area of the Kiukais culture is the coastal areas between Helsinki and Pori and the archipelago of Åland (Meinander 1954a). The Kiukais culture is regarded as a mixed culture as they lived mainly from hunting and gathering, but also some agriculture. Kiukais pottery has been found in several of the Neolithic settlements on Åland, but there is actually only one site considered a “pure” Kiukais site, namely Myrsbacka in Saltvik parish. The other sites usually show mixed material.

The site of Myrsbacka (Sa 20.8), Saltvik parish is located just south East of the Pitted Ware site of Svinvallen. At the latter, a few pieces of Kiukais pottery have been recovered as well. Svinvallen appears to be a continuation of the Pitted Ware site of the above mentioned Glamiders site. The pottery on Myrsbacka is typical for the Kiukais culture, and aside from a fishing-line sinker of typical Kiukais type (according to Meinander this is a lead artefact from the Kiukais culture), a dagger of south Scandinavian flint, and flakes of flint were recovered. These finds indicate both western and southern contacts. The dating of this site to the LN is estimated by its elevation above sea and other sea level studies (Martinsson 1985). There are similarities between the ornaments on the pottery from Myrsbacka and from sites on Muskö and Täby in East Sweden, which also indicate contacts to the west (Meinander 1984). Compared to other sites on Åland where Kiukais pottery has been found, e.g. Bromyrsbacken and Krokars, the ornaments on pottery from Myrsbacka are more varied, but with several similarities as well. Comparing pottery from Bromyrsbacken, Myrsbacka and Svinvallen, the latter shows a higher
quality, both in its ornaments and the quality of the goods. Based on this, Meinander suggested that these sites may represent a chronological sequence with a continuous degradation in the quality of the pottery (Meinander 1954a).

**The Bronze Age**

Research on the transition from the Stone Age to the Early Bronze Age (EBA) has been somewhat neglected. The EBA is represented through ceramics found mainly on Neolithic sites and the Late Bronze Age (LBA) is represented by comprehensive research done mainly at *Otterböne* site on Kökar and the *Tjärnan* site in Saltvik. The material on these sites is however considered very unique so it is difficult to apply the results to the BA culture on Åland in general. Very few metal finds from the BA have been found on Åland. A miniature bronze knife was found in a small cairn in Långbergsöda, Saltvik parish during an excavation in 1989 and is dated to EBA, probably Montelius' period II or III. It shows similarities with knives found in southern Sweden, though these are generally smaller than the one found on Åland (Andersson, 1990a, 1990b).

The few stone ship settings on Åland have either been placed in an Iron Age or LBA context. Two stone ship settings have been excavated in *Grytverksnäset* in Sibby, Sund parish. One was empty and the other contained burnt bone and indications of *in situ* burning. At *Samuelstorp* in Hammarland parish, a pottery vessel dated to EBA was found in a destroyed cairn (Figure 3). The vessel has a coarse, hard and grey surface without any ornamentation and is similar to finds of pottery from north-western Germany and south Scandinavia (Dreijer 1983:60).

![Figure 3. Early Bronze Age Vessel from Samuelstorp. Plate ÅMF 851. Photograph: The Åland Board of Antiquities](image)

In 1894, a sword and a dagger of Bronze was found in Sundby in a large cairn, 21 m diameter and 2.5 m high. The artefacts are of south Scandinavian origin and can be dated to the beginning of the BA.
Hummelmyrshägnaden (Su 21.2), Sund parish has been interpreted as a Neolithic site, but sherds of BA pottery, and what was interpreted as a BA settlement “floor layer”, were found during excavations in 1938. During the excavations at Hummelmyrshägnaden a piece of Bronze, possibly the remains of a razor, was found. The above mentioned site of Grytverksnäset, a grave field with several cairns and stone ship settings, is situated just east of Hummelmyrshägnaden. Here, the largest stone ship setting on Åland is located, measuring 12x3 m. Quern stones were also recovered in two of the cairns at Grytverksnäset (Dreijer 1937, Dreijer 1938).

At Smidjeberget (Sa 20.14), Saltvik parish there is a grave field containing seven stone cairns, where excavations have taken place. In the surrounding area there are also several grave fields with groups of cairns and solitary cairns. There are also indications of settlements from both the Neolithic and the BA in the areas. The majority of the excavated cairns at Smidjeberget were empty, but one of them contained a miniature bronze knife. Typologically it can be dated to Montelius’ period II or III. When found in 1990, no knives of this type had ever been found in Finland; only a total of six knives had been found in Finland, all of which had been encountered before 1954. In the immediate surrounding of the cairns and the excavations, stone axes and chisels of LA – BA type were found (Andersson 1990a, 1990b).

At Stickelkärr (Ge 16.10), Geta parish furrowed pottery, identified as Otterböte pottery, dated to the LBA was found at the same level as textile imprinted pottery identified as Kiukais pottery from the LN. This raises questions about the connection between LN and LBA settlements. Some of the furrowed pottery found here shows traces of both eastern and western contacts. During the excavation the remains of a hut was also found and in the nearby surroundings there were three cairns and one fire-cracked stone heap/mound. A hearth was found as well (Vinberg 1985, Storå 1987).

During the excavation of the heap of fire-cracked stone at Norrgårds (Sa 20.17), Saltvik parish, a rectangular hearth of the same kind as those in Glamilders was found. Meinander suggested that this type of hearth is unique to the Pitted Ware culture and only found on Åland, but they have parallels in East Prussia and were subsequently also found at the Hemmor site on Gotland. One bronze object was recovered and the pottery found is representative of BA type. The majority of the pottery is rusticated and only a few pieces have traces of being finger furrowed. This pottery is similar to finds from Tjärnån site and, based on this, can be dated to LBA. In connection with the hearth, BA pottery was found, and based on this a suggested BA dating is given for the hearth as well (Storå 1990).

A BA heap of fire-cracked stone placed on top of a Neolithic settlement was found at Härdalen (Sa 21.11), Saltvik parish. The pottery here is of three different types: The BA pottery is typically rusticated and furrowed, there is also east Swedish Pitted Ware pottery and west Finnish Kiukais pottery found at this site. The Kiukais pottery was found
in levels five to seven, clearly underneath the mound of fire-cracked stones and in the Neolithic cultural layer. An interesting fact is that the one bronze object recovered was found in level five, along-side with both finger furrowed pottery and Kiukais pottery. Analyses of the bone recovered show that seal was dominant. Dog and pig bones were recovered in the basal layers (Nunez 1990).

**Otterböte site** (Kö 6.16), Kökar parish is suggested to be a LBA seasonal hunting station, the origins of the pottery can be found in Poland. A petrographic analysis showed that some of the fragments of pottery contain leucit and according to Gustavsson (1997:84) this is a mineral not found on Kökar, mainland Åland, or in Scandinavia, but the origins are found in the southern parts of the Baltic, in northern Poland in the Lusatian Culture (Ibid:108p). A new investigation shows that this might not be the case, apparently leucit has been found in both Sweden and on Åland (Tomas Eriksson, pers. comm. 2008-10-01). Various imprints of seeds have been identified in the pottery: among them is Barley (*Hordeum vulgare*), a fairly advanced kind of oat that wasn't introduced to Scandinavia until the BA, Chickpea (*Cicer arietinum*), the first identified grass pea in Scandinavian material, Sea-rocket (*Cakile maritima*), Scurvy-grass (*Oxalis enneaphylla*) and three types of weeds. All this indicates that the people who came to Otterböte knew about and used a type of agriculture that at that time was unknown on Åland. Gustavsson is reluctant to see this as evidence of trade, since there was a good source of food in the sea and scattered evidence of agriculture on mainland Åland and this type of “import” is not needed to sustain the population (Gustavsson 1997:109).

**Tjärnan** (Sa 20.11), Saltvik parish is a LBA settlement located close to the shore line, not very far from the above mentioned Glamilders settlement where BA pottery also has been found. Amongst the finds is a bronze needle that according to Meinander is of a Jutland or northern German origin and dated to around 600 B.C. An intact clay mould was also recovered from this site. Amongst other finds a quern stone can be mentioned. The recovered pottery is of finger furrowed Otterböte-type. Some of the pieces are perforated rim pieces or rim pieces with ears. Similar pottery can be found in Continental Europe during the major part of the BA as well as in Denmark and southern Sweden, on Gotland and in Uppland in East Sweden. The finds are suggestive of a permanent, probably fairly wealthy settlement, according to Meinander (1952, 1953).

When excavating the site **Kulla** (Su 13.10), Sund parish, the floor of a large hut (6 x 4m) was found. A posthole was located almost in the middle of the hut and another at the edge. The hut had a figure-eight shape, which could indicate that there were two huts next to each other. A kiln for burning clay weights was also found (Törnblom 1980).

A magnificent needle of silver and gold plated bronze was found at **Syllöda** (Sa 28.7), Saltvik parish in 1956. During excavations, pottery was also recovered and the earliest phase of the settlement is identified as LBA, the rest was identified as Iron Age. An Iron
Age grave field is located not far from the excavated area, and the needle most likely belongs to the Iron Age phase.

**Discussion**

The Neolithic period on Åland is fairly well understood and there are several well-documented Pitted Ware sites. No monumental architecture in the form of Megaliths is found, which indicates that this tradition did not reach Åland. This is not surprising considering the landscape which consisted of numerous small barren islets with suitable habitats for seals and sea-bird but not for agricultural activities. The large amount of seal bones recovered from the Neolithic sites shows that there is little or no doubt that there was an abundance of seals that initially brought people to the islands (Welinder 1976, Meinander 1984, Núnez 1986, Storå 2001). Even if the people who settled the islands or made seasonal visits, used pottery it is not necessarily a sign that they cultivated cereals on the island (Stenbäck 2003:51pp). The archaeological findings indicate that they were hunter-gatherer groups who used pots, a so called sub-Neolithic way of life.

However, the shift from LN to BA is not yet fully understood on Åland. The main research concerning the BA consists of excavations at Tjärnan (Meinander 1953), Otterböte (Dreijer 1951, Meinander 1952, Gustavsson 1997) and Kulla (Törnblom 1980). These sites all show dates to LBA but both Tjärnan and Otterböte are unique sites and we suggest that they are not representative of the BA on Åland. On the other hand, the cultural expressions on Åland during this period differ from the rest of Scandinavia, and typical BA traits like hoards and rock art have for example not yet been found. In all of Finland, only a few bronze artefacts have been found to date and, according to to, only nine hoards had ever been reported, six of which dated to the LBA. Combined, these nine hoards contained less than 20 artefacts. These are expressions of the easternmost exchange with Continental Europe and Scandinavia. Generally they represent a cultural trait that is uncommon in Finland (Meinander 1954a:85pp) as compared to the traditions and material culture found on Gotland, which has an abundance of large cairn burials, hoards and three site with rock carvings of South Scandinavian type (Hallin 2002, And erberg 2005).

Hans Gustard-Nilsson (1999) has conducted a study on the transition from Stone Age to BA in Möre, in the area of Kalmar, East Sweden, in regard to the localisation of settlements and hoards. He suggested that the transition was more a mental shift than a physical one: The people continued to live in the same place, but they used the surrounding area in a new way due to influences from the outside world.

Jan Storå (1990:13) has expressed the opinion that transition to the BA on Åland did not involve any major changes in the economy; hunting and fishing continued to play an important role for a long time. It appears that the BA on Åland followed the same course
suggested by Niklas Stenbäck (2003) for the Neolithic period. He and others suggest that hunting and gathering was the most important during the Pitted Ware culture time period, husbandry and farming were known, but the people only depended on these forms of subsistence to minor extent. This is due to the fact there was no obvious need for the people on Åland to adapt to a fully agricultural society (Stenbäck 2003:55-56, 193pp) as the landscape as such did not invite this, nor could it sustain a large scale agriculture or husbandry. There are indications that the Pitted Ware culture way of life continued into the BA (Dreijer 1983:39, Storå 1990, Fagerholm-Sjöblom 2000). This fits with the theory that the term ”Bronze Age” in the Nordic countries is associated with new ways of living and thinking rather than with the metal itself, and that this way of thinking was introduced during the Neolithic through various interactions including large areas in present day Europe (Varberg 2005:76pp.).

Quern stones, which are interpreted as evidence of agricultural activities, have been found in excavations on Åland, including both Neolithic and BA sites. However, there is still no definite evidence of permanent agricultural activities until the late Iron Age (Fries 1963, Glückert 1978, Sarmaja-Korjonen et al 1991). Sarjama-Korjonen et al studied sediment cores from two lakes on Åland and place the beginning of cereal cultivation to 1600 – 1700 BP. New cores of sediments from Åland are currently being studied, which might render new information in this matter. However, Sarjama-Korjonen et al (1991:154) point out that it is difficult to study the cereal cultivation during the BA since the lakes were isolated subsequent to the BA. Stenbäck is skeptical about the finds and the interpretations of quern stones from the Pitted Ware sites on Åland, but gives no further explanation for his criticism (Stenbäck 2003:91).

On the island of Kökar, an important Franciscan monastery was established during medieval times, and the monks were definitely cultivating food. However, during the period when the monastery was dissolved in the end of the First World War, there was no agriculture on Kökar; fishing and hunting were the main subsistence (Gustavsson, pers. comm. 09-02-10). This demonstrates that there was no actual need to farm to be self-sufficient and maintain a population. As mentioned above, the landmass shows a radical increase on Åland from the Neolithic (350 km²) to the BA (500 km²). The question is whether there was room for a so-called BA economy, i.e. a stratified society based on agriculture and husbandry.

In his book Social Stratification in Polynesia (Sahlins, 1958) Marshall Sahlins claims that the premise for a stratified society is a food production that is so large that there can be specialisation in the overall economy, i.e. not everyone has to be part of food production. This means that there are people who are able to remain outside the food production, who control it and organize it, and in the end distribute what is produced. Another indication of a stratified society in Polynesia is, according to Sahlins, the construction of large monuments. There are several cairns on Åland, the ones that are located on mountain sides or in a peak location and usually solitary are considered to be BA, though
more research is required to confirm this. The presence of BA cairns could suggest that some kind of stratified society existed; the question is when did the burial customs change? The problem is that very few cairns on Åland have been excavated and this makes it difficult to draw any far reaching conclusions. The sword and dagger found in the cairn in Sundby does open up the possibility for interpretations that Åland was a stratified society during the BA.

On the other hand, what does the lack of hoards and rock art suggest? Being able to hoard artefacts and to build large monuments are both indications of a society that has an economic surplus. The cairns found on Åland might suggest that there was a stratified society, to a certain degree anyway. Hoards on the other hand, according to Gurstad-Nilsson, are a sign of regional power struggle (1999:192). This may indicate that the lack of hoards means a lack of regional power struggle. Thomas Eriksson has recently correlated a major climate change, which probably affected the agriculture in a negative way, with a large increase in hoards in the Uppland area of Sweden during the LBA. He interprets the increase in hoards as a sign of stress in the society and not as a wealth surplus (2009:266). There have been very few lakes and marshes on Åland and no investigation of them, which could be a reason for the lack of BA hoards. The bronze finds which have been made are of a south Scandinavian or north European type and not of Finnish type. Only three bronze axes have been reported on Åland all of which are all socketed and at least one is of so-called Mäldardalen-type (Dreijer, 1939:18, 1983:58-59). A type of BA stone axes, “Rombyxor”, an adze type in a rhombic shape, have been found, but no further studies have been conducted on those on Åland.

Regarding the amount of bronze artefacts in the Nordic countries, it is interesting that we over a period of 1200 years end up with a very small amount. During the BA in Sweden, for instance, there are few bronze artefacts found, which could only “fill a rucksack” every two decades or so. On the other hand, a fairly large amount of BA pottery, both rusticated and furrowed, has been recovered. This type of pottery, called "Otterböte-type,” is usually dated to LBA. The discussion and interpretation of the bronze artefacts have been the focus when interpreting sites from the Early and LBA, but perhaps the use of pottery as an indicator of LBA or EBA is important. Both rusticated and furrowed pottery has been found in Neolithic contexts in both Pitted Ware and Kiukais culture contexts (see above regarding the Härdalen excavation).

The Neolithic period in Scandinavia is referred to as a time of transition, moving from an economy based on a hunter-gatherer subsistence pattern to a society with agricultural influences and a low number of domesticated animals. During the BA period, it is suggested that both animal husbandry and agriculture increased to become the primary source of subsistence. However, we have to consider that large variations occurred due to the various environmental settings and landscapes. A society based on hunting and gathering seems to have survived longer on Åland than on the Swedish mainland. It is apparent that agriculture and husbandry were well known to groups living on Åland.
during the Neolithic, since quern stones, imprints of grain, and bone remains from domesticated animals have been found on several Neolithic sites. On the Glamilders settlement, an archaeobotanical analysis showed evidence of cultivation from the mid-Neolithic.

The archaeological evidence from excavations at the Otterböte site on Kökar suggests that the agricultural practice was different from that found on mainland Sweden and on Åland until the late Iron Age. However, Otterböte is also a special site that we cannot really compare it with the other known sites on mainland Åland. Evidence from archaeological excavations on Åland indicates that agriculture and husbandry found their way to Åland during Neolithic times, but the main emphasis was towards an economy based on hunting and fishing throughout the LN and BA.

A type of BA cairns, referred to as “long cairns,” have been found along the coastal line of Norrland (Badou 1959:161pp). Such cairns are also reported in SW Finland and three have been found just south of Visby on Gotland. One long cairn in SW Finland archipelago has been excavated at Björkholmen close to Ekenäs by Fil. Dr. Henrik Jansson, University of Helsinki in 2001. It contained quartz flakes and a flint arrow head (Martinsson-Wallin, pers. comm.). One of the cairns found on Åland has been excavated and BA pottery was found. The long cairns are found on the Finnish mainland, but the definition is different from the ones found in North Sweden. The latter is twice as long as wide, whereas in Finland they are three times as long as they are wide. The Finnish long cairns however, match the description of the few long cairns on Gotland. These types of remains have in common that they are mainly found around the Gulf of Bothnia (Gustavsson, pers. comm.).

Cairns, pottery, and a few finds of Bronze artefacts, influenced and traded among cultures in Scandinavia and Continental Europe, have been found on Åland. Floors of rounded huts have been found, however no long houses. A life style based on sealing, fishing and sea bird hunting, with knowledge of agriculture and husbandry, prevailed during the transition from LN to EBA as did the Eastern influenced Kiukais style. Åland appears to be a melting pot of eastern, western, northern and southern influences. Our review of archaeological investigations from the Neolithic to BA on Åland reveals no clear pattern and further research is required to better understand this transition.

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Neolithic Monuments on Gotland: Material Expressions of the Domestication Process

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Abstract - In this paper I will summarise the evidence of monumental architecture during the Neolithic period on the island of Gotland. The archaeological record shows the presence of only one confirmed and one suggested Megalith structure, of Dolmen-type on the Island. The human skeletal remains found here indicate collective burials including individuals of both sexes and of various ages. Another stone monument, which might be interpreted as a Causeway structure (Sa-rup-type,) may derive from the Neolithic time. During the middle Neolithic (Pitted Ware Culture phase) there is an absence of stone grave architecture and the burials from this time are found in shallow oval pits, often as individualised and single burials. In the Late Neolithic, stone cist burials appear and they are distributed all around the Island. These usually contain one or a few individuals and are in some cases covered by Early Bronze Age cairns, indicating continuous use at the sites into this period. These changes in the burial practices during the Neolithic demonstrate a trend towards a higher degree of selectivity among the individuals buried, which may indicate a trend towards a higher level of stratification in the society.

Introduction

The aim of this article is to make an overview of stone architecture from the Neolithic period on Gotland. During the past 25 years the research has been dominated by excavations and research concerning the middle Neolithic Pitted Ware sites, especially the Ajvide site, situated on South West Gotland. Here a grave-yard containing 84 graves has been uncovered (Österholm 2008). However, I suggest that it is now time to carry on in the tradition initiated by Nils Lithberg (1914) and continued by Inger Österholm (1989) to study the dynamics of the complete Neolithic era, as a foundation to understand the transition to the Early Bronze Age (EBA).

Traces of so called Pitted Ware cultural groups (named for their use of a specific type of decorated pottery), are indicated by large activity sites located by the coast. Their marine economy, constituted one phase of an ongoing process of adaptations, influences/interactions and choices during the Neolithic. The forerunners, or the Neolithic pioneers, who brought ceramics and domesticated animals to the Island, as well as erecting a few megalith structures during the early Neolithic, are overshadowed by the Pitted Ware groups which in fact were influenced by the Neolithic lifestyle. At these sites are finds of domesticated pigs, cattle and sheep, an abundance of fish and seal bones, and remains of large ceramics vessels, central to this sub-Neolithic population. The subsequent phase, (called the Late Neolithic LN), is less visible concerning preserved settlements/activity areas, but the stone cist graves make them clearly recognisable all around the island. It is suggested that the foundation of agriculture/pastoralism developed on a large scale and became a major part of the economy during this time period. A number of the stone cists were also covered by stone cairns during the EBA, indicating a con-
tinuous use of the same sites. This is probably due to kinship groups bonding with their genealogically important forefathers buried in the stone cists.

The project discussed in this paper is called *Neolithic Lifestyles: Dolmens, Earth Burials and Stone Cists*. It is part of a larger project called *Lifestyles – from Hunter to Urban Mind. The longtime perspective on environmental adaptation and cultural choices in the Baltic Sea Region* conducted at the Department of Archaeology and Osteology at Gotland University. It aims to illuminate the dynamics of the Neolithic period on Gotland, and investigates how the natural environment and cultural choices are important influences on the development of human lifestyles and how these diverged during different time periods. Particular interest is also paid to the transition from the LN and the EBA phases. The theoretical starting point for my project is founded in the rhetoric expressed in the material culture that can be traced to different time horizons (Hodder 1993). I also base my work in relational multivariate studies (Bourdieu 1977, 1996, Bourdieu and Wacquant 1992), and a discussion on the human memory and the uses of memorial places (Nora 2001). The presentation and analyses of the material culture expressed in stone architecture in this paper should be seen as an introduction to the project in its current phase. This material will be subject to further investigation with varied aims. I argue that the large amount of available data needs to be worked on and analysed in new manner, and I have realised that general archaeological thoughts to date can be quite bound in conventions that need to be re-evaluated.

**The Dolmen at Ansarve: A collective grave**

This Dolmen is the so far only confirmed Megalith construction on Gotland, located on the western part of the Island, in Tofta Parish about 20 km south of Visby. It is situated by the road leading to the old fishing camp site at Gnisvärd. The grave consists today of four 1.2 meter high granite blocks. At the N side there are three stones making up the wall of the chamber on this side. About 1.5 m to the south stands a single large block making up the southern wall of the same chamber. Other features observed are vertical entrance stones on the east corner side of the chamber, and the grave is surrounded by a rectangular outline of limestone slabs limiting a stone pavement surrounding the chamber stones. Based on typological features this rectangular Dolmen can be dated to the end of the early Neolithic c. 3400-3300 BC (Bägerfelt 1992:7) (Figure 1.).

**Discovery, description, excavations and results**

This grave monument was first discovered by the military medical doctor Karl Bolin in the early 1900s. It was furthermore excavated by him and the School Principal Hans Hansson in 1912. They excavated (scooped out!) the chamber and found, according to Nils Lithberg (1914:94) three human lower jaw bones, which they collected from this excavation. They also mentioned a smaller cist inside the chamber made from sand stone plates (Lithberg 1914:94). Such box-like divisions are common in megalithic graves on the mainland (Blomqvist 1989). Lithberg discussed this structure as a possible mega-
lithic grave, and based on the geographical dispersal of flint artefacts on the island he concluded that “If considering finding such megalithic graves on this island this is the ultimate spot” (Lithberg 1914:94, my translation).

In the Swedish archaeological site inventory, FMIS (hosted by the National Board of Antiquities) the grave is described as follows:

“Description of the grave: Stone setting, round, c. 7 m diam. and 0,4 m high. In the stone setting, a stone cist or chamber, 3x1,5 m (ESE-WSW) and 0,4 m deep. The N wall consists of three large stones, the easternmost with flat side placed (N-S) 0,8x0,35 m and 0,8 m high, the middle stone is 1,6x0,5 m (SW-NE) and 1,2 m high (Inside measurements), the westernmost is 0,7x0,7 m and 1,2 m high. The S wall of the cist consists of one stone 1,8x0,5 m (WSW-ENE) and 1,2 m high. The S edge of the stone setting is disturbed, and in N-NW 0,3-0,5 m large stones are visible. The stone setting is disturbed also on the E side by gravel quarrying.” (my translation).

The description was made in 1976. It is vague and non interpretative and has not been updated since, even though both earlier (1912) and subsequent (1984) archaeological investigations have been carried out. The grave is described as a “stone setting” with a cist/chamber, and it is not indicated as a Dolmen. However, no field notes or excavation

Figure 1. The dolmen at Ansarve, Tofta Parish (Photo P. Wallin).
reports have been found from the 1912 investigation. We do not know if such notes were ever made. The only note of this event can be found in a few lines in Lithberg’s dissertation on The Stone Age of Gotland from 1914. During my re-investigation of the 1912 excavation, I found information in the museum storage about finds of bones tied to this place. The note about these bones indicates: “Tofta parish, Ansarve hage, 3 graves with unburned bones (1,717 and 2,511 grams) and one grave divided in three divisions of (29, 38 and 76 grams). Found at excavation in 1903. No osteological analysis. Stored in box 6818”. The 1903 date is 9 years earlier than the excavation by Bolin and Hansson, so one may ask if there was an earlier excavation carried out in 1903 by Bolin and/or possibly Oscar Wennersten, who was active at that time. Anyway, these bones were also recovered by Christian Lindqvist who analysed the bones (1997). He did not mention the reference to the 1903 date, but took for granted that the bones derived from the 1912 excavation of the Megalith, which is probably right. This bone material consisted of 14 teeth and 246 bone fragments and the total weight of this material is 4371 grams. According to Lindqvist, all types of bones from the human body are represented, but fragments of the large bones of the bodies are most common and small bones like finger and toe bones are underrepresented (Lindqvist 1997:362). At least eight individuals could be identified among these bones.

A new excavation of the grave took place in 1984. This time students from Stockholm University (one of them is the author of this paper) carried out the excavation under the direction of Inger Österholm and Göran Burenhult (Figure 2.). This time several interesting findings, both concerning construction features, find materials, and bone remains were revealed. The grave was determined to be a Dolmen standing on an E-W oriented rectangular stone/earth platform outlined by limestone slabs standing on edge. The area outside the chamber was partly filled with stones.

![Figure 2. The dolmen at Ansarve, after the 1912 excavation.](image-url)
The grave itself was originally built of six big blocks roofed by one large cap stone. Today only four of these stones remain. A depression was identified on the south side of the chamber indicating that one large side stone originally was placed there, and there are oral traditions indicating that the cap stone “long time ago was brought home to the farm” (Lithberg 1914:94, my translation) probably sometime during the second half of the 19th century. Furthermore, one big boulder probably has been standing at the N to NE corner of the chamber, although no depression was identified there. The NW stone at the entrance was placed with a flat side facing to the N on angle with the W side chamber stone. Here were also two lime stones placed on edge indicating the entrance stones to the chamber. The find material from this excavation contained 249 flint flakes of which three were of south Scandinavian flint (one scraper), four stone axes (round cross-section) and four amber fragments (two in the chamber). A rectangular slab of sandstone with zigzag ornamentation was found close to the short side enclosure (Bägerfält 1992:22). A bronze *tutulus* dated to Montelius period II, was also found inside the chamber (Figure 3). In addition, 547 teeth and 5950 bone fragments were found, the majority were recovered from “the dump” of the 1912 excavation in the N to NE sector of the structure. The total weight of these bones was about 23 kg (Wallin and Martinsson 1986, 1992). These bones were analysed and were shown to derive from a total of 31 individuals of whom 16 were adults, four juveniles, eight infans II, and three infans I. Of the 16 adult individuals, four could be determined to be female and three male. The dental status was generally good, only five teeth had caries, but tartar and heavily worn teeth were common. Only a few fragments were identified as faunal remains: Pig 1 fr., Seal 8 fr., Dog 3 fr., and Fish 4 fr. (Wallin and Martinsson-Wallin 1997).
East of the chamber, but still within the outline of the rectangular demarcation, a complete human skeletal remain was discovered. The remains belonged to a woman with an age determined to at least 40 years and possibly older (Figure 4,). The dental status was poor, three molars showed traces of caries, all lower molars on the left side were missing (pre mortem), since the alveolus was re-ossified (closed). When reconstructing the crushed cranium, a rounded hole was noted in the parietal bone on the left side. The suggestion is that this was a trepanation with signs of an ongoing infected healing process, which finally may have caused her death (Figure 5). Trepanations occurred in Scandinavia during the Neolithic. A bone from this skeleton was $^{14}$C analysed, and the date indicated an age to the late Bronze Age (However the date had a range of ±230 years and may be erroneous), which means that this monument might have been re-used during the time when the stone ship settings were erected in the vicinity (Wehlin and Martinsson-Wallin 2009 manuscript). If the buried woman belongs to this period it is an anomaly since the prevailing burial practice from the Late Bronze Age period is cremation of the dead, and furthermore trepanations are not known from this period either.

Figure 4. Skeleton of the secondary buried woman dated to the late Bronze Age (after Bägerfeldt 1992).

Figure 5. Probably trepanated skull of the secondary buried woman (Photo P. Wallin).
The dating of the Megalith is based on six bone samples that have been radiocarbon
dated. Three were carried out by conventional $^{14}$C after the 1984 excavation, and three
additional AMS-dates were carried out by Lindqvist on the earlier excavated material.
The earliest date on mixed bone material from the 1984 excavation indicated a date to
the EBA, a date in line with the bronze tutulus. A bone from the female outside the
chamber indicated late Bronze Age, which is in line with the erected stone ship settings
just next to the Megalith. A charcoal sample from under one of the stones indicated a
date to around 500 AD and seems to be out of context. However, the later AMS dates
show great agreement with the typological dating of the grave type, and all three dates
fall in the time frame 3300-2900 BC cal. 2 sigma, which indicates a late Early Neolithic
or early Middle Neolithic initial phase of the structure.

A possible Dolmen at Licksarve 2:1, Tofta Parish - A detective story...
An additional structure, which could be a second Dolmen, is in the area at Licksarve 2:1
(RAÄ 27) also in Tofta Parish. This structure was already mentioned by Lithberg (1914)
and it was described as standing on a yard close to a barn. The barn was probably built
sometime in the 1800s, but there was no trace of it in the 1930s. When building this
barn it is said that several human skeletal remains were discovered, and that they were
re-buried in a nearby stone cairn (this is according to Jan-Erik Wiman born on the Lick-
sarve farm as mentioned in Sigvallius’ report from 2001). The site is described in the
inventory (FMIS) as part of a destroyed stone ship setting in the following manner:

"Stone ship setting, part of, consisting of four close together standing granite blocks. The
stern stone is 1,5 m high and 1x0,8m wide and is slanting 30$^\circ$ towards SW. SW-SSW
of the stern stand the other three stones, which are 0,5-1,3 m high and 0,7-1 m in diame-
ter. All are slanting. Between the stones are some smaller stones from later agricultural
activities thrown in." (my translation).

This interpretation is a standard connection when there are a few uprights clustered,
since we always make connections to the familiar. On Gotland there are several hun-
dreds of stone ship settings, but Dolmens are extremely rare. If it would have been the
other way around, the interpretation of these stones would probably be different. There
are in fact other archaeological sites with large stones interpreted as stone ship settings
that probably have to be re-evaluated (Personal comm. Joakim Wehlin April 2009).
However, on an old photo (probably early 20$^{th}$ century of the site signed by O. Wenner-
sten, found in the Gotland Museum archives, he has written “Stendös i Tofta. Lixarve”
(“Dolmen at Tofta, Lixarve”) (Figure 6).

When visiting the place today the barn is no longer there. Instead there is the main road
from Visby, as well as a bicycle track, just a few meters from the stones which make up
the possible Dolmen. In 1998, a rescue excavation was undertaken in a clearance stone
cairn in close proximity to the uprights, and in 2008 a trench was excavated just to the west of the upright stones due to placement of cables in the ground.

The excavations were carried out by Gunilla Wickman-Nydolf at Gotland Museum. According to her field reports, the 2008 trench was unproductive, but the 1998 excavation showed some interesting results: The “clearance cairn,” as it is described, was in fact a grave. It was situated about 5 m south of the upright stones (RAÄ 27), and was not marked on the economical map. Part of this structure was excavated. Just below the surface of the cairn, human skeletal remains were discovered mixed with recent remains. These bones were probably the re-buried bones mentioned above, which had been moved from the area of the three upright stones. At the bottom of the cairn, but outside the rim of an inner circular construction, cremated bones were found together with stamp-ornamented pot shards dated to late Iron Age. The inner grave construction was
made of dry mason, a stone packing, and some stones placed on end. The re-located human skeletal remains were analysed by Berit Sigvallius in 2001. In short, the result of this analysis indicates that remains from around 15 individuals were placed on the cairn when the barn was built. Of these, 14 individuals were adults (adultus-maturus 18-64 years), three could be identified as males and three were possible females. One of the individuals was a newborn child (Sigvallius 2001). These remains are of importance since they have been found in connection to the possible Dolmen structure, and since they are unburned they probably belong to the Stone Age or maybe EBA. The large number of individuals is also indicative of a collective grave as a Stone Age Dolmen. An aspect of interest concerning the stone structure itself is that the location is atypical for stone ship settings. The structure is located far from the sea or suitable water ways at the time of construction, which is very uncommon. According to current research by doctoral candidate Joakim Wehlin (Personal comm. Oct. 2009) all known stone ship settings have been erected close to water. They are all located by the sea or lakes, and burials found in the stone ship settings are furthermore generally from cremated bones. Datings of the human skeletal remains found on top of the stone setting will be undertaken as soon as possible to determine their age. Another research agenda is to investigate other sites with upright stones, which have been interpreted as destroyed stone ship settings.

During the writing of this paper new data in this the Licksarve case came to the surface in the shape of two handwritten letters (found at ATA in Stockholm) dated to 1876. It was the farmer Anders Westermark who asked for permit to remove the stones, when building a barn (the barn on the Wennersten Photo above). This means that the barn was probably built shortly after 1876. A description was also sent to the authorities in Stockholm that described the monument in the following way:

"On request from the farmer Anders Westermark I, the undersigned this day on his land at Lixarfve in Tofta Parish visited an ancient monument. By doing this I thereby ascertained that the site consisted of a sand and gravel mound with 4 larger granite blocks, one 6 feet above the soil and 3 feet in cross section and two of 4 feet height and 2 feet in cross section. This mound placed close to the main road is oval shaped and about 40 feet long, widest to the north. The largest stones are also placed in that direction as the enclosed drawing indicates.

Tofta 11th Mars 1876. C.P. Norrby Olof Östergårda Schoolmaster" (my translation)

These letters indicates several interesting facts, first of all people seems to respect the monuments and a stone ship setting would probably not have been so completely destroyed by them, secondly there was obviously a c. 12 m oblong mound surrounding the stones especially towards the N (where the barn was built). The mound was obviously removed, and the human remains may have been found in this mound/gravel when building the barn, since there is no mound today…This mound is also in line with the rectangular shape of the nearby Ansarve dolmen, and one can also add that mounds are not
found in this way associated with stone ship settings. -And best of all, there was an original drawing of the site! (Figure 7, 8.).

Figure 7. The possible dolmen at Licksarve today (Photo J. Wehlin).

Figure 8. Drawing of the possible dolmen from 1876 (ATA, Stockholm).
Gothemshammar - a causeway structure of Sarup type, or something else?
The area of Gothem located at the Lina wetland/lagoon area was a very resource productive area during the Neolithic and the Bronze Age. Due to the shore line displacement, the area was actually a lagoon area with connection to the sea through a narrow channel during the Mesolithic/Early Neolithic phases. The earliest settlement at Svalings represented the early Mesolithic times covered by a later Litorina transgression (Seving 1985). It was followed by several late Mesolithic so called “axe settlements”, some in the transition phase to the Early Neolithic. One Early Neolithic Funnel Beaker settlement, Ardags in Ekeby sn, is found a few km further to the W (Österholm 1989, Lund 1996), and a middle Neolithic Pitted Ware burial/settlement site is found at Västerbjers in Gothem (Stenberger 1943, Leijonhufvud 1989, Sundberg 2008). A LN death house was furthermore found at Nygårdsrum (Hallström 1971:114). EBA features are indicated by the huge “Majsteroir” complex only three km inland from the Gothemshammar site described below. The late Bronze Age activities in the area are indicated by a large number of stone ship settings located especially on the N side of the Lina wetlands (Figure 9).

Located on a peninsula close to the entrance of this former rich lagoon area just to the east at the mouth of the River of Gothem, is a site called Gothemshammar. This is a 500 m long stone wall of uncertain age (RAÅ Gothem 131, Busarve 1:34) placed in N-S direction across the peninsula. It has previously been interpreted as a defence or fortification structure from the Iron Age. In prehistoric times it delimited the peninsula that
stretched out into the sea toward the East. The wall is constructed of granite stones of varying size (ca 20-80 cm in diameter). The width of the wall varies between 5-8 m and the height is generally about 1 m in the middle and then slanting towards the E and W where the height is about 50 cm respectively. At the North end of the wall the terrain is steep and slanting, which due to the shore line displacement was limited by the sea in prehistoric times. The South end of the wall ultimately ends about 10,5 m above the current sea level, however a structural change of the outstretched wall is seen at about 12,5 m above sea level. The last 75 m of the wall to the S is probably a subsequent addition. Along the W side of the wall, about 20 ditches are located which vary from about 10x5 m to 25x5 m in size. They appear today as vaguely defined depressions in the ground situated about eight meters W of the W side of the wall.

**Landscape studies and dating problematics**

A section of the wall structure was subjected to archaeological investigations by the author during the autumn of 2009. The aim was to determine the age and function of the structure. The “defence structure” as it is described, has been discussed scientifically as well as in the media for a long time. The main questions raised is whether it is a defence structure from medieval times/Iron age or a gathering place/cult place of so called “Sa-rup” type (Andersen 1975, 1997), dated to Neolithic times (Appelgren & Engström 1989a, 1989b, Bendegard 1970a, Uddholm 1970b, Gotläningen 1944, Sandblom 2008).

In 1982, a test excavation was carried out in the area, when two trenches were excavated by Katarina Appelqvist and Johan Engström. These trenches produced no finds, but a thermoluminiscence dating was carried out on burned stones which were detected and resulted in a dating to c. 1160 AD. This date was considered erroneous based on the fact that they assumed that the wall was limited by the sea on the south side, but in c. 1160 AD, due to the shore line displacement, the lowest part of the structure would then have been placed too high above the actual sea level. The conclusion was that the burned stones may have derived from a natural fire, and due to the structural appearance the excavators suggested that this is probably a construction from Neolithic times (Appelqvist & Engström 1989a:24-25). They base their assumption on two facts: 1) that the wall at the S side is located at a level too high above the sea and 2) the fact that there are ditches along the W side of the wall, similar to the Danish and Scanian structures dated to the Neolithic.

**Excavation and phosphate analysis**

In 2007, I initiated a new investigation of this structure which began with a phosphate analysis. The analysis was part of a BA paper in archaeology. The result showed a tendency of higher phosphates on the western side in connection to the ditches (Sandblom 2008). Due to this fact, a seminar excavation at Gotland University directed by the author was carried out in August-September 2009 aiming to settle the question regarding the date of the structure.
Figure 10. The excavation trench 1 at Gothemshammar in September 2009 (Photo P. Wallin).

Figure 11. Structure inside the wall (Trench 1), indicating possible foundation for stabilizing plank construction (Photo P. Wallin).
It was 19 x 2 m and placed perpendicular to the wall. It cut the wall in an E-W direction and extended 2x2 m along the W wall side from the main trench (Figure 10). The trench stretched out from one of the ditches in W through the wall towards the E, thus providing an insight to the section and the internal structure of the wall. The excavation revealed several interesting features and finds. There were stone wall demarcations along both the W and E side, which marked the width of the structure to about 6 meters. Between these stone rows there was a gravel/soil filling and slightly off centre from the structure to the E was an inner construction of stones placed in two rows with a gap in-between. The gap was visible in two to three layers of stones indicating that it might be the foundation of some kind of plank construction (Figure 11).

The W wall side also indicated a section of lime stone dry mason technique. The find material consisted of bones found in two different contexts, some bones came from the sand/gravel filling, and some came from a darker layer detected under the wall construction. The bone material consisted of animal bones from pigs, sheep, cattle, seal (one bone) and a few fish fragments. There was no difference in the composition of the species among the bones from the two contexts, which indicates that the filling material is from the same activity as the bottom layer. One artefact, a pointed tool of bone, was recovered from the filling layer. It is quite possible that the filling material derived from the ditches.

New extensive phosphate analyses were also carried out on the land stretching to the E towards the sea. There were occasional indications of higher phosphates, but test excavations in these areas remained unproductive. The structure and the surrounding areas were also mapped, especially around the southern part of the wall. Two sheep teeth were sent to $^{14}$C analysis at Lund University (AMS-facilities), one from the filling and the other from the dark layer under the wall structure. The two samples showed the following result: LuS-8685 found in the wall filling was dated to 2660±50 BP, which calibrated at 1 zigma gave 895-790 BC and at 2zigma 920-760 BC. The second sample LuS-8684 found in a dark layer under the wall was dated to 2850±50 BP, which calibrated at 1 zigma gave 1120-930 BC and at 2 zigma 1210-890 BC. These preliminary dates clearly indicate a mid to late Bronze Age context of the structure or the activity predating the structure. If the bones derive from a Bronze Age settlement/activity area located at this spot before the structure was built, it seems a strange place to settle since the area at that time consisted of a rather open stone beach on a peninsula projecting out into the sea. The bone remains found do not reflect a beach camp, since they mainly consist of domesticated animals. Based on this, it seems more likely that the bones found may come from animals brought as food during the construction of the wall. Since it seems the wall has been added on, it may still be possible that earlier parts may be detected further to the N of the wall, which means that a Stone Age date still may be possible. This needs to be investigated further.
Stone cist burials: Late Neolithic and beyond
During the LN, the stone cist burials found their way to Gotland. At this time, visible stone graves can be found all around the island. These graves generally consist of a rectangular stone cist made of limestone slabs placed on end. The size of the cists varies in length between 1-3 m and the width varies between 0.5-1.5 m. The depth of the cists is generally about 0.5 m. They are generally placed in the centre of a flat stone/earth setting, in some cases covered by stones and earth. This fact makes it quite difficult to be accurate in the estimation of the exact number of such graves on the island. They may have originated in the LN and continuously used in the Bronze Age. Such structures are also found in the Iron Age. In this context, I only briefly discuss the known excavated stone cists and furthermore give a broad overview of the complete known stone cist material as it is presented in the FMIS register. Based on the available data, I present the dispersal of the complete material. I also briefly describe one of the most spectacular excavated stone cist known from the LN on Gotland.

Figure 12. Dispersal of excavated Late Neolithic stone cists (after Luthander 1986).
Analysis of excavated Late Neolithic stone cists

On Gotland there are 42 excavated stone cists dated to the LN. Of these, 36 have more complete information, which serves as the foundation of this analysis (Figure 12). The dataset used here was first collected by Ann Luthander (1988) and further discussed by Bägerfeldt (1992). Since stone cists of similar appearance were used in the Bronze and Iron Ages, I find it difficult to use typology as chronological indicators. Instead, I suggest that morphological definitions of the Neolithic stone cists be used to say something about social and symbolic aspects. The grave morphology, in correlation with different find variations, is analysed aided by a multivariate Correspondence Analysis which investigates how the individual graves vary in relation to their associated variables.

Results of the Correspondence Analysis (CA)

The (CA) is a multi-varied relational statistical analysis, which can be used to analyse individuals in relation to their associated variables. The purpose of using a statistical analysis is not to prove certain relationships, instead it is used as a tool to illuminate possible relationships and use them as a base for producing hypotheses about the relationships revealed (Broady 1991). In this study this means that the individual stone cists are the find units to which different variables and characteristics are tied. Here I have included the 36 excavated Neolithic stone cists, which were complete enough to provide sufficient data. The following variables were considered in this analysis: 1) Length, width and depth of cist, 2) Orientation of the cist, 3) MNI of the individuals buried in the cist, 4) Diameter and height of stone setting/cairn, 5) Different artefacts found in the cist. These units and variables were analysed using the WinBASP statistical package, which is available to download free from this site: [http://www.uni-koeln.de/~al001/basp.html](http://www.uni-koeln.de/~al001/basp.html).

Interpretations of the analysis

Three groups indicating the following general trends can be defined through the analysis (Figure 13). We can refer to them as A, B and C:

Group A: This group has small (0,6-1,9x0,35-0,5m) to medium (2,0-2,3x0,6-0,95m) sized stone cists. The surrounding stone setting is flat (0,3-0,4m) and has a small diameter (4,5-9m). Graves have a N/S orientation (in some cases an E/W orientation) and are generally for a single individual. The main finds consist of flint daggers, bone needles, ceramics, and in some cases bronzes.

Group B: This group has medium (2,0-2,3x0,6-0,95m) to large (2,4-3,1x1,0-1,5m) sized stone cists, generally placed in a medium sized (9,1-15m in diameter and 0,5-1,0m high) stone cairn. Graves have N/S orientation (in some cases an E/W orientation) and were mainly for 2-3 persons. The finds consist of flint daggers, bone beads, arrow/spearheads, slate/bone tools, stone axes and in some cases bronzes.
Group C: This group has large (2.4-3.1x1.0-1.5m) to medium (2.0-2.3x0.6-0.95m) sized stone cists generally placed in a large (18-30m in diameter and 1.5-2.5m high) to medium (9.1-15m) sized stone setting or cairn/mound. Graves have N/S orientation with one exception in E/W. These are collective graves for 4-20 persons. The finds consist of flint daggers, bone needles, ceramics, boar teeth, bone beads, flint and in some cases bronzes.

Since certain find materials are represented among all the groups described above, and the chronology based on the artefacts is not clear, we need to look for other explanations than chronology. It is possible that the groups may indicate social differentiations and status. Higher complexity is seen in the larger structures, which also include several buried individuals. This could be a sign of genealogical complexity among certain important families. The single smaller graves may be expressions of certain important specialists/individuals or less important family lines. Further analyses along this line could be fruitful when studying the processes that may be of importance during the societal development in the LN and the EBA.

**Distribution patterns of stone cists found in FMIS**

Concerning the general distribution of observed “stone cists,” I have examined the material that I collected from the FMIS dataset. From this, we have an indication of the possible distribution of LN/EBA stone cist graves on Gotland. The problem here is that
some of the cists in the inventory may in fact be dated to the Iron Age. To try to avoid this problem, I have examined the find contexts of the individual cists found. Only the cists that indicate LN finds or those with ties to EBA stone cairns are included in this study. If Iron Age graves are mentioned in the description of the site, I have not included them in this study of stone cist dispersals.

Figure 14. Dispersal of all possible Late Neolithic/Early Bronze Age stone cists.
The result of the studies
After an evaluation of the data on stone cists found in FMIS, I ended up with a total of 104 stone cists at 86 sites, distributed all around the island. If studying the dispersal map we can see that the occurrences are tied mainly to coastal locations, except in the Vallstena and Martebo areas where cists are found in inland locations. These are areas that also have great densities of surface finds from the LN period. This may be caused by inland lakes located around Martebo and Lina wetland, and the Dalhem river systems, which likely attracted people to settle in these areas. When looking at the dispersal, it appears that there are about seven areas with concentrations of cist graves. The areas could be defined in this way:

1) Bunge/Lärbro, 2) Boge/Vallstena/Hörsne, 3) Kräklingbo/Gammelgarn/Alskog, 4) Lau/Burs/Rone, 5) Vamlingbo/Sundre/Grötlingbo/Fide, 6) Klinte/Eskelhem/Tofta, 7) Visby/Väskinde/Martebo. (Figure 14).

When comparing the dispersal of stone cists with LN surface finds (Stålbom 1984) there are some similarities but also some differences. A notable difference is that there are fairly high frequencies of surface finds in the central parts of the island. This may be due to the burial landscape belonging to the old traditional areas along the coast, which means that the surface finds in fact indicate the settlement areas closer to fertile soils in inland positions. When instead comparing the dispersal of stone cists to the dispersal pattern of EBA cairns (Nilsson 1981), we find that they more or less have the same dispersal, which indicates that the burial landscape also during the following phase was located in the coastal areas.

The stone cist “Godsbacken” at Häffinds in Burs Parish: -An excavated example
During the summer of 1984, a large earth mound was excavated under the direction of Göran Burenhult. It was carried out within the parameters of the project “Arkeologiska Prospekteringsmetoder” associated with the summer courses conducted by the Hemse Community College in collaboration with Stockholm University. The excavated earth mound was about 27 m in diameter and included secondary burials of cremated bones dated to the late Bronze Age around 700 BC. This earth mound covered a central stone cairn 10 m in diameter that, from the find material, was dated to the EBA c. 1500-1200 BC. However, when excavating the stone cairn, stones in concentric circles were detected at ground level and in the centre of four such concentric circles. At the bottom of the structure, a rather large stone cist with multiple burials (22 individuals) was found (13). This grave could be dated on typological grounds to LN, c. 2000 BC, by three nicely shaped bone needles. The buried individuals were from different age groups as well as sexes. One female and one male were placed in a central location in the cist, the female was oriented with the head towards the west and the male to the east. The remaining 20
individuals were all placed with their heads to the east (Burenhult 1986:344-351) (Figure 15).

**Times and monuments - A story of introductions, choices and acceptance**

Comparisons of Neolithic burial customs on Gotland indicate changes in grave rituals over time. Different expressions can be traced and the rhetoric is clearly told by the use of different stone materials. The dolmens are indicated by a local bold statement, expressed through huge stone blocks, that was however quite unsuccessful. Pitted Ware graves are earth graves without visible stones, but they were very common. Finally, the LN statement used local limestone slabs and stones/earth to establish an accepted use of stones on the individual family levels expressing symbolic power distinctions (Bourdieu 1996), something that continued into the Bronze Age era when new traditions with ties to the old graves, turned memorial milieu into memorial place (Nora 2001).

The Early Neolithic dolmens are rare on the Island and only the one at Ansarve is confirmed and preserved until present day. A somewhat demolished grave of the same kind is possibly found at Licksarve, but this one has not been thoroughly investigated and confirmed. Both these graves were located in Tofta Parish approximately only 4 km apart on the Western side of the island. A question that has to be asked concerning the Ansarve dolmen is, what does this grave in fact indicate? This question must be followed
by questions concerning who made it, and who were buried in this dolmen. First, one can conclude that there are no other burial practices found from this time period, which means that the only practise observed from the early Neolithic is represented by the Ansarve grave. One can speculate whether other graves of this type have been destroyed, as indicated by the possible grave at Licksarve. This could have happened in subsequent time periods, for example during the late Bronze Age, when large stones were needed to build some of the stone ship settings. The other possibility is that the dolmens at Tofta are in fact unique, and that they indicate the only remains from an introduction of a cultural trait that in a sense failed and was never generally accepted.

Gothemshammar is suggested to have been a communal central place, as well as a strategically placed focal/meeting ground, possibly during the Neolithic but at least during the mid-Bronze Age era. The structure including an enclosure wall and ditches (which indicate similarities to Sarup structures), which so far has rendered a Late Bronze Age date, was possibly influenced by south Scandinavian/continental structures of similar types, but transformed into a local expression.

During the middle Neolithic Pitted Ware cultural phase, the burial custom was individual earth burials. No visible stones marked the spot of the buried individuals but every grave is individualised. However, this burial custom is seen all around the island, and therefore appears to be a widely accepted tradition. Persons of all ages and sexes are observed in these grave fields. Small children are however underrepresented in the excavated material. Men are generally more commonly found than women which is indicated both in the grave fields at Visby and at Ajvide. This could indicate that not all individuals in fact were buried and that alternative treatments have occurred. Dispersed human remains are common on these sites and these could be indicative of alternative treatments.

The LN stone cists are represented all around the island, and an analysis carried out suggests that different types and sizes are indications of social distinctions of symbolic expressions rather than chronological indications. This implies that new Neolithic influences reached the Island again, and this time it is reflected in the burial treatment as well as in a changed settlement pattern, a pattern that clearly continued into the EBA and beyond.

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Bronze Age Landscapes on Gotland: 
Moving from the Neolithic to the Bronze Age perspective

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Abstract-The aim of this initial study is two-folded. One aim is to discuss the large Early Bronze Age cairns on Gotland from a perspective of the transition from the Neolithic to the Bronze Age. Another is to make contextual studies of the sites with large cairns and try to understand them as “places” beyond the grave concept. Survey data of Gotland cairns with a diameter of 20 meters or more shows that at least 25% of the c. 200 cairns are reportedly connected to so called “south stones” and surrounded by other structures, especially at southern and western locations. The survey data is of varied quality and it is necessary to visit the sites to obtain more in-depth information regarding the on-site contexts. As a case study, features in close proximity to the large Uggarderojr Cairn on south east Gotland have been excavated. The excavations showed ritual activities tied to the Early Bronze Age cairn site. Subsequent re-use of this site for ritual activities and burial(s) is also indicated.

Introduction
This initial study aims to discuss the temporal, spatial and social implications of large Bronze Age cairns on Gotland and the transition from the Late Neolithic to the Early Bronze Age phase. In particular, the monumental Uggarderojr Cairn and its surroundings on the south east coast of Gotland are studied closer with the aim to shed light on the function and biography of this site. We want to better understand its ideological meaning as it might give clues to the structure of the Bronze Age society on Gotland.

Large Bronze Age (BA) cairns on Gotland are thought to have been built in the Early Bronze Age (EBA) period (1700-1100 BC). It is however suggested that their dating and use are complex, since some investigated structures cover Late Neolithic stone cist burials and contained some secondary burials from the Late Bronze Age period as well (Stenberger 1941, Lindqvist 1979, Hallin 2002).

Studies by Per Erik Nilsson (1981,1986, 2002) on the BA cairns on Gotland suggest that the large cairns’ spatial distribution may indicate five different local communities on Gotland emerged during the EBA, which he interprets as the result of a chiefdom society, as defined by Renfrew’s model from 1973. The appearance of large cairns was, according to Nilsson, an expression indicating the rise of a stratified society ruled by chiefs. On the other hand, the finds from settlements, for example house foundations from this time, are very few. According to Gunilla Hallin (2002) the few, discrete remains from BA domestic space do not support the interpretation of a raise of a stratified chiefdom society on Gotland during this time.
A problem in the discussion concerning the BA on Gotland is that the graves are highly visible but the settlements are not. This contrasts with the pattern in South Scandinavia where both large mounds and extensive settlements featuring large house structures have been found (Kristiansen 2007). However, the building of large monuments as well as field systems, as indicated in the Liffride, Terra Nova and Ekeby examples on Gotland (Hallin 2002), are usually considered as indicators tied to some kind of chiefly power and a stratified society, but clearly further investigations are needed on Gotland regarding these issues. Unlike mainland Sweden and Denmark, no large scale contract work investigations to make way for buildings and infrastructure have been necessary on Gotland, and it is likely that long houses and other settlement structures are yet to be discovered. The remains of a BA long house have, for example, been found at Norrlanda (oral account Gunilla Nydolf, Gotland Museum). The large cairns or mounds from the BA in Scandinavia are usually complex structures, and as Theéden (2005) suggests they probably also express social relationships like age, gender, kinship and genealogies and not just status and social stratification.

A comparative study of a prehistoric and a contemporary village site in Samoa (Jennings et al. 1982) could serve as an analogy to the issue of chiefly structures, settlements, and monuments on Gotland. In prehistoric Samoa, a social structure designated an open chiefdom society based on kinship relations is indicated (Goldman 1970). This social structure continued into the historic and modern society even though structural changes in the chiefdom society can be observed over time (Krämer 1994). A comparative study of the settlement patterns in the prehistoric settlement and the contemporary settlement have been carried out (Jennings et al. 1982). This show that there are no signs of a chief’s house being larger or the surrounding land area more extensive than settlements for “ordinary” people, since the land probably was and certainly is communally owned. Large house structures are rare and are interpreted as community houses and not as belonging to a certain high chief. This could indicate that the size and structure of the domestic landscape not be so useful as indicators of a social hierarchy as the monumental architecture found in the form of large platforms, mounds and community houses, the latter probably served both ritual and secular purposes (Martinsson-Wallin 2007). However, it is suggested that chiefdom society is not a static, one dimensional social frame, and that the domestic pattern in and of itself can most likely not tell us everything about the social structure of the society as there is great variability. The concept “chief / chiefdom” is varied and must be placed into a relevant context to be understood as it evolves differently due to various historical trajectories and contexts. It is suggested here that the larger cairns and agglomerations of larger cairns indicate central social and ritual places connected to a social structure based on kinship relations, and furthermore that the BA society on Gotland had some kind of social governance which went beyond the extended family level with ties to external networks. This social structure could have its roots in the Late Neolithic setting. By studying the natural and cultural BA landscape with focus on the spatial relationship of the BA remains, we try to obtain a deeper understanding of what kind of society prevailed during this time and how it distinguish from what was
before and what came after. In what way did the people who lived on Gotland structure their society, and why did they start to build large burial cairns during the EBA time frame? Where did they live, who were they, and what external and internal relationships did they have?

**The beginning of a project**

My recent preliminary investigations clearly show that the large cairns were located close to the BA sea shore or other water ways (Figure 1). This confirms the view set forth by Nilsson (1981, 2002). Their placement close to the Sea has also been recently discussed in a cognitive way by König (2007), and Widholm and Bradly (2007) in studies of cairns on the south east coast of Sweden. They discuss these places as located in a liminal zone, i.e. between the arable land and the sea, a place where the living and the dead meet.

What is a central place and how can we define it? Can the large Uggarderojr cairn and its surrounding features for example be considered a “place” far beyond the grave concept and also served as an important ritual site?

The burial customs on Gotland during the Neolithic and Bronze Age phases vary greatly. At least one Megalith dolmen structure connected to the Funnel Beaker (TRB) tradition, with c. 30 buried persons of varied gender and ages, has been found and investigated on Gotland (Wallin and Martinsson-Wallin1997). During the Middle Neolithic (MN) the prevailing burial custom is single earth graves without (as far as we know) any visible markers above the ground as is evident by the excavated graves at several of the Pitted Ware sites on Gotland (Janzon 1974, Burenhult 1997, 2002, Österholm 2007). During the late Neolithic, the grave form apparently changed once again to stone cists, which usually contained one to three persons, but a few excavated structures also exhibit several buried persons. These types of graves have indications of reuse, are sometimes covered by BA cairns (Lindqvist 1979, Nylén 1993:119, see Wallin this publication) and an apparent continuity is seen. The BA landscape is in a way placed “on top” of the previous landscapes since we see reuse, but the shore line displacement also provided new areas for the people of Gotland to use during the BA.

Is change in materiality due to internal developments and social power struggles and/or due to interactions and movements of people in relation to material cultural expressions? We see continuity in the settlement of Gotland by humans since the colonisation phase c. 9000 years ago, but yet we still pose questions regarding who settled the Island and their cultural backgrounds and interactive networks that existed over time. Is it the same population group who has resided here since colonisation times?
Was there only occasional genetic and cognitive input from the outside, for example though exogamy, and/or has Gotland been populated by several groups with different
external cultural traditions over time? Archaeologists have over the years collected an abundance of survey and excavation data, but we are still not entirely sure how the landscape of this Island was utilised and by whom over time. Why is the burial concept changing drastically during the cause of time?

Recent aDNA studies on Neolithic populations on Gotland and the mainland by Malmström (2007) indicated that the population belonging to the Pitted Ware culture on Gotland is closely related to contemporary populations of the eastern Baltic region. The Pitted Ware groups had a subsistence based mainly on hunting and gathering, seal, fish and sea bird hunting, while still making pots and utilising domesticated animals as pig and bovid, a sort of sub-Neolithic package. The aDNA research by Malmström (2007) supports hypotheses that propose a Neolithic or post-Neolithic population replacement in Scandinavia. This research has generated questions about the population on Gotland and are there for example new groups moving in during LN (late Neolithic) and/or the EBA when then large cairns start to be constructed? Or was this development solely due to an exchange of ideas among a few people through exogamy? During the Late Bronze Age, cremation burials are found in the visible Stone Ships Setting monuments, and both are novelties in the Gotlandic context. However, cremation burials are also found as secondary burials in the cairns at this time, and it is likely that smaller cairns with cremations are built during this time as well. Is the shift in burial custom and the building of stone ship settings an internal development or adoptions from outside of Gotland? (for further discussion see Wehlin this publication).

In order to answer these questions I see the need for in-depth studies of the existing archaeological data set, the landscape and climate variability, osteological analyses, dating of bone material as well as aDNA studies on human skeletal remains from the various grave contexts looking at the long term diachronic perspective from colonisation times to the end of the BA.

During the various Neolithic and BA phases discussed above, we see re-use of older burial monuments. This may be attempts to connect to the past, to re-enforce genealogies based on kinship, and to assert that certain titles connect to various land areas to be able to “legally” claim these areas. This type of reasoning, where the BA cairns have primarily been reduced to territorial markers, has previously been set forth by Carlsson (1987).

To gain deeper insight into these matters, it is very likely that we have to start collecting and re-analysing data on the local scale, using contextual approaches, and subsequently also incorporate analyses and discussion on a broader scale. This is however not one person’s task but without question should involve research teams.

It is not an easy task to get beyond simplistic answers and determine what changes and material expressions are due to internal social dynamics and identity markers vs. outside
influences as mental constructs, in material or physical form. I suggest a need for contextual and holistic analyses of the prehistoric material culture found. This could, for example, be done by using multivariate analyses to create hypotheses about the past that could be tested in various ways using archaeological methods. In this way both de-fragmentation and reconstruction of the material culture are incorporated into the analyses. I favour use of relational statistics, in particular the correspondence analysis, which is based in relational sociology associated with the work and research of Pierre Bourdieu (1977). Using this methodology, the individuals (represented by the cairns for example) and their variables (type and size of stones, association to different landscape features, proximity to the Sea and other water sources, proximity to other contemporary remains etc.) are co-analysed. De- and reconstruction of landscape are also important. The landscape displays many layers of utilisation and there are differences in vegetation and climate over time as well as shore line displacement, which are important to investigate in detail.

A case study of an EBA site, the large Uggarderojr Cairn and its surroundings, is presented and analysed below. Kristiansen and Larsson (2005) discuss what they refer to as “institutions” which may be “societies/specialist groups” who transported goods as the bronze, tin and copper, or finished bronze artefacts. These may have had ties to special types of monuments like the Stone Ship Settings, but this type of monument on Gotland is generally dated to the later BA period. Based on formal analogies, I suggest that ritual places and burial grounds of the clan group may have served as ritual meeting places both within and among clan groups on Gotland and beyond. I here pose the question, could Uggarderojr have served as such a place?

To investigate a “place” like Uggarderojr my approach is a contextual and relational one. GIS is used to analyse various factors in the landscape. Since the cairns in the Uggarderojr area are of huge dimensions, several of them are difficult to actually excavate. Other methods of investigating their internal structure, secondary use, and possible other subsurface structures in the area, are georadar and magnetometer analyses. Such analyses have previously successfully been carried out by me and colleagues on large stone monuments in Pacific Island communities (Clark and Biran 2007) but in the case of Uggarderojr they have not yet been used. These methods are probably also difficult to use here due to the shape of the structure and the lime stone bedrock.

The significance of the spatial dimension(s) and localising factors of the monuments is being explored, and the monumentality, and its role as an active agent in the shaping and re-shaping of social relations, is investigated. I have previously discussed these issues regarding large monuments in Island communities in a Pacific context where a dual-processual model was favoured (Clark and Martinsson-Wallin 2007). Formal analogies regarding biography, monumentality and structural principles of monuments in Island societies are thereby gained, which may have some relevance for interpretation on a
general level, but contextual analogies are also productive for the interpretation on specific level.

The “Stones in the South”

The concept of the “Stones in the South” was set forth by renowned Gotland archaeologist Erik Nylén (1959, 1993). During extensive excavation and survey projects in the 1950s and 1960s, he found that upright stones were often placed in a south or south west position in connection to Bronze and Early Iron Age graves. He mentions that up-right or large stones placed on edge are found in south or south west positions close to large EBA cairns and that these up-rights often form cists or small stone ship settings (Nylén 1993:120). He also mentions that the stone material of the “south stones” shifts from granite to limestone during the late part of the Pre-Roman Iron Age, and that an external cultural influence of this expression is indicated from Poland and the Przeworsk Culture (Ibid: 127). However, this culture is dated to the Early Iron Age and could not have influenced the EBA culture and the erection of “south stones” as such. A question to ask is if the erected stones in the south actually is a more recent phenomenon that the actual EBA cairn, and indicate reuse, or are “the stones in the south” special for Gotland or the result of previous external influences from the south or south west?

I have compiled survey data on Gotland cairns with a diameter of 20 meters or above, and the study clearly indicates that at least 25% of the c. 200 cairns is reported to have “south stones” and are also surrounded by other structures, as stone settings, especially at southern and western locations. The survey data is of varied quality and it is necessary to visit these sites to obtain more in-depth information. It is also of importance to examine old excavation reports, survey data, historical maps, and general texts concern-
ing early scientific and exploration visits to Gotland. Journals and drawings from these visits might render new data on subsequently destroyed prehistoric contexts.

I have so far visited some of the locations with larger cairns, and it is clear that “south stones” are very common (Figure 2). According to doctoral fellow Joakim Wehlin, who has visited several additional sites with large cairns and stone ship settings on Gotland, it is more the rule than the exception that “south stones” or south and south west structures are to be found close to the cairns. It is very likely that they and the cairn form “places” beyond the grave concept with various structural features involved. Future pursuits of this research project will be to survey, map, and excavate such structures.

**Excavation at Uggardeorj**

The cairn called Uggardeorj is considered one of the largest cairns on Gotland. Its diameter measures c. 50 m and it stands over 7 m high (Figure 3).

![Figure 3. The large cairn at Uggarde, called Uggardeorj (Photo Helene Martinsson-Wallin)](image)

Today, the place is a visitors’ site and the area has not just one but in all seven large cairns situated within a radius of 500m. The landscape is discrete and the cairns stand out in this open, flat area. It is a former sea floor with thin subsoil, which today functions as a pasture land and a visitors’ site with a marked trail. The area is partly flooded in the spring and autumn. The land where the larger cairn is situated belongs to Rone parish in south east Gotland and borders Eke parish where several large cairns are also found. This site has been used as a case study and excavations at the site were made in the summer of 2009. Our detailed survey has shown that the large cairn today is situated c. 8 m
above sea level on an ancient beach formation extending in a north-south direction. Three of the other large cairns in the area are situated c. 10 m above sea level (Figure 4).

The excavation (Martinsson-Wallin and Wehlin 2010) aimed to find out more about the remains in the area close to the large cairn. Three low stone settings and one posthole are reportedly located at the foot of the cairn. The two stone settings to the south and west of the cairn were of particular interest for further investigation as was the dating of the remains. Were the remains contemporary with the large cairn, e.g. dated to the EBA? Or could the remains be from other time frames?

The stone setting Uggarde 3:1 RAÄ Rone 10:3, situated just South West at the foot of the large cairn (Figure 5, 6) measured c. 9x9 m in diameter and c. 0.5 m in height. The stone material was of varied type and size but three larger stones were located in the centre and sand stones were more prevalent towards the edges. There were some stones with cup marks, and one stone found inside the setting had marks suggesting that it had been used as a grinding stone. When removing the turf, cremated bones were found in the centre of the stone setting thus indicating that this might be remains of a burial. There were two concentrations of cremated bones one close to the surface and the other in relation to a dug down feature in the bottom of the stone setting. Some un-burnt sheep bone found close to the dug down feature in the centre of the stone setting showed a c. 2300 BP date indicating an Early Iron Age connection.

Figure 4. Mapping of the Uggarde area showing six cairns and ancient shorelines 7,5 masl closest to the Uggarderojr cairn. Mapping by Joakim Wehlin
Figure 5. Overview of excavation area showing the outline of Uggarderojr Rone 10:1, Stone Setting Rone 10:3, Fire cracked heap, Post hole Rone 10:5 10:4 and Test pits 1-3. Map by Joakim Wehlin.

Figure 6. Stone Setting Rone 10:3 and Uggarderojr cairn in the back (Photo Helene Martinsson-Wallin).
In connection with the cremated bones on the top of the stone setting a few pottery sherds were found, but they were non-diagnostic. Other finds in the stone setting were larger number of flakes of flint and quarts. The quartz flakes were distributed evenly in the whole stone setting mainly found below the stones on the beach gravel. The flint flakes were more prevalent on the north side of the stone setting mainly below the stones. The flint material was briefly examined by Dr. Jan Apel (oral account Nov. 2009) and he indicates that the techniques used were direct and not very sophisticated. This is indicative of a EBA context. In the bottom layer, in-between the three larger stones, a dark area (a shallow dug down pit,) containing soot and a few pieces of charcoal was found. A charcoal sample from this feature was dated to the latter part of the EBA c. 3075 BP. The interpretation of the stone setting is that the initial construction of this feature is tied to the EBA time frame. The dug down feature in-between the larger stones in particular and the flaking of flint and quartz. The stone setting have probably been added on later and used for an Early Iron Age burial. The cremated bones found were very fragmented and difficult to determine. An osteological examination was carried out by BA student Linnéa Svensson and among the cremated bones she could only identify a few human bones, which belonged to the concentration found on the surface of the stone setting which thus could indicate a burial.

A small heap (c. 2x2 m) of fire cracked stones RAÄ Rone 10:4 (Figure 5, 7) was found c. 10 m south of the cairn, and extensive firing had been done in situ, perhaps on a number of occasions, since the stone material was severely burnt and cracked easily. Beneath the stones on the south side were some un-burnt bones found, among them a human and a dog bone and one pot sherd. A charcoal sample from the heap was dated to c. 3050 BP, an EBA date, probably contemporary with the large cairn. Fire-cracked stone heaps are often connected to settlement activities during the BA, but in this case it is unlikely that the heap belong to an ordinary settlement activity. The excavations showed that activities related to the stone setting, the fire cracked stone heap, and the large cairn are indicated to date to the latter part of the EBA c. 3050 BP (c. 1400-1200 BC). Re-use and additions of the stone setting, for burial or sacrificial use is also indicated.

Three test pits were also excavated at the foot of the cairn, and two of them revealed probable post holes. Dated bone and charcoal samples indicated activities to the Late Iron Age c. 1300-1400 BP. A large stone (c. 1.70 m long and 1 m high,) which also had two faint cup marks on the upper surface, was incorporated of the outer curb of the large cairn.

The test excavation placed at its base revealed burning activities, and the phosphate content indicated by phosphate analysis was also high in the soil. Three bones from a bovid metacarpal was found dug down at the bottom in front of the stone and they dated to the beginning of the Late Iron Age.
The North stone setting was not excavated, and the stone lined post hole was excavated but did not give any results. A scanning with metal detector in the area around the cairn did not yield any results either.

![Fire cracked stone heap, Rone 10:4](Photo Helene Martinsson-Wallin)

The excavation showed that there were activities around the cairn tied to the EBA time frame, which could be interpreted as of a ritual nature, for example the fire cracked stone heap, cremated bones, stones with cup marks and the quarts and flint flaking.

Quarts flakes, in particular, are very common in EBA ritual contexts (Goldhanh 2007). The finding of cup marks and other special stones in the stone setting are also of significance. The excavation also indicated that the area was used for ritual/burial activities during subsequent time frames. The larger stone setting, in particular, has probably been used as a burial site during the Early Iron Age when stones probably were added on the stone setting. A Late Iron Age use of ritual nature is also indicated close to the large cairn. Several other interesting stones and stone concentrations were found on the south and west side of the cairn, but since the ground is a former ancient beach with mixed stone material only an extensive soil stripping and excavation in the area could give further information regarding other possible activities and built structures in the area. With the finding of the fire-cracked stone heap and the quarts and flint flakes at Uggardeorrojr this site can be viewed as a place beyond the grave concept with adjoining ritual activities. It can be seen an important place of re-use for burial or rituals. Further investigations of south and west constructions in the proximity of large cairns are of great interest to better understand the context of these features, their similarities, differ-
ences and re-use, and we can thereby develop a more in-depth understanding of the socio-cultural context of the BA society on Gotland.

Summary
The aim of this article was two-folded. One aim was to discuss the temporal, spatial and social implications of large EBA cairns on Gotland from a perspective of the transition from the Neolithic to the Bronze Age society. Another was to make contextual studies of the sites with large EBA cairns and try to understand them as “places” beyond the grave concept. The burial customs on Gotland during the Neolithic and Bronze Age phases vary greatly and one question that was touched upon is why these dramatic changes have occurred with time. The conclusion is that further studies are needed, and that it is now especially important to compile and analyse already excavated data with new methods and in contextual ways. Approaches where both the dynamics of the natural and cultural landscape are studied together are suggested as ways to move forward to obtain new results to understand long-time dynamic processes.

I suggest that a closer study of the large EBA cairns and their surrounding should be carried out to be able to understand more about their ideological meaning. This might tell us more about structure of the EBA society on Gotland. The so called “south constructions” in relationship to large cairns is the focus of my current investigations, and it is suggested that they and their association with the cairn and other features together with a special location in the landscape form “places” beyond the grave concept with various structural features involved. Preliminary investigations showed that at least 25% of the c. 200 cairns on Gotland with a diameter exceeding 20 m is related to a “south stone” or south structure. However, the survey data is varied and it is likely that the percentage of “south stones” and other features will increase during re-survey. A spatial study of the larger cairns shows that they are located by the coast and that they are more prevalent on the east than the west coast and agglomerate mainly in five areas. A more in-depth analysis using multivariate statistics, like the correspondence analysis, will be carried out after a new site survey and investigations of earlier survey and other data on the sites are carried out. As a case study, the monumental Úggarderojr cairn and its surroundings on the south east coast of Gotland have been investigated to shed light upon the function and biography of this place. The investigations indicated that ritual activities such as fire makings, the activity of flaking quarts and flint, and making cup marks were part of making this place a ritual site beyond the grave concept. These were activities dated to the latter part of the EBA (c. 1400-1200 BC), which probably is contemporary with the initial use and building of the large cairn. Since the cairn is situated at c. 8 m.a.s.l, it is not likely that there is a late Neolithic structure at the bottom, but rather that it is built during the above suggested time period. Re-use of the site in the Early and Late Iron Age is also indicated, and the former use might indicate that the stone-setting to the west of the cairn was added on and used as a burial site during this time. Other activities tied to the latter time frame has been interpreted more as ritual
actions. Further survey work and investigations are needed to be able to understand more about the transition from the Neolithic to the Bronze Age on Gotland and the origin, role and use of the large EBA cairns and their attached structures.

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Gotlandic Bronze Age Settlements in Focus

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Abstract—In this article I will give a brief review of my research concerning settlements and settlement-patterns from the Bronze Age on Gotland, published in a licentiate thesis (Hallin 2002), were the main theme was to discuss the problems to find Bronze Age settlements on Gotland. I have continued excavations on the main site, Liffride in Alskog parish, and some preliminary results will also be presented. However, Bronze Age settlements are still my main focus, but there are other aspects to reflect on from the period, such as why there are so few sites of rock carvings on the island compared to the “richness” of other remains? Considering the tradition during the late Bronze Age of burying in house urns over a vast area of Europe, indications are that the earliest urns in northern Europe are to be found on Gotland. This could be of further interest when discussing the role Gotland held in the exchange system in the Baltic Sea during the Bronze Age.

Bronze Age monuments on Gotland

The large monuments from the early Bronze Age in Scandinavia could either be mounds or cairns. On Gotland the typical monuments from the period are cairns, that is, with few exceptions, they are built of stone and not turf. The few that has been investigated, show that some of them have been utilised for burials from the Late Neolithic until the late Bronze Age, but there are also signs of incorporating periods of apparent abandonment (Lindquist 1977:40). The cairns could be of significant size, such as Bätticke cairn, 63 m in diameter or Uggarderojr in Rone, 50 m in diameter and c. 7 m in height (Stenberger 1941:15, Martinsson-Wallin and Wehlin 2010). Although the most impressive cairns have not been excavated some of the less monumental one’s which have been excavated, show architectural details such as inner cones and concentric circles (Hallström 1973:122, Hallin 2002:14). Depending on the definition, location and size the main part of the cairns probably belong to the Early Bronze Age (EBA), I have suggested elsewhere that there are c. 400 or more cairns with a diameter over 10 m on Gotland (Hallin 2002:19). Others suggest the monuments to be more than 1000 on the island (see Nilsson, 1986:70). In this context the sum is of less importance but the size of the monuments has led to far reaching conclusions regarding the Bronze Age societies on the island; these were stratified societies, led by chieftains, and represented by the large grave cairns (Nilsson 1986:78 and 87). Although this interpretation has since been contested (Hallin 2002, Thedéen 2005), these ideas still linger in texts regarding Bronze Age Gotland. In my opinion the monuments alone cannot provide enough data for general statements of social organisation, it has to be contextualised with other aspects. Susanne Thedéen also discusses the early BA graves in Scania and the “question of the Chiefdom” (2005:390-398). In relation to combinations of artefacts she sees a variation of identities amongst the buried in the mounds were gender, age, social status and ethnicity also are considered in the interpretation. She suggests it difficult to say that monumental mounds are to be interpreted only as signs of chieftains (ibid. p. 398).
In the late Bronze Age (LBA) phase there is a significant shift in the burial custom; cremation of the human remains and a new type of monument; the stone ship settings. This type of graves relates on Gotland, as far as we know, all to the late Bronze Age. Boat-shaped graves are not uncommon in the rest of Scandinavia, and around the Baltic Sea, but not all of them date to the Bronze Age (Artelius 1996:22 and 64). The appearance of Stone Ships in Estonia, where in old research tradition the interpretation was a colonisation from Gotland to Estonia (Nerman 1954:274) but Hansson (Hansson 1927:86) suggested that the similarities between the ships should be interpreted as culturally linked. As Bolin (2005:220-226) discusses, the chauvinistic one-sided thought of colonisation from west to east (or from south to north), or as with artefacts, must be questioned for a deeper understanding of cultural contacts, change and variation.

As an example of one Stone Ship-Setting on the island, Gnisvärd in Tofta parish is amongst the most well known. It is nearly 46 meters in length and 7 meters wide; the stem stones about 1.3 m high. Immediately to the south of this ship is another, slightly smaller, and in the vicinity of the Gnisvärd ship are other forms of graves such as round stone settings and cairns (Lindquist 1987:123).

In Rannarve, in Klinte parish there is an example of a small fleet of Stone Ship-Settings. At this site there are four ships attached to each other stems in a north-south direction, with a total length of ca 35 meter. In one of them a house-urn was found during excavation in the 1960s with cremated bones in and two miniatures knives of bronze (Grimlund-Manneke, 1977:46). On Gotland there are finds of 13 house-urns and nine of them found in stone-ship settings (Sabatini 2007:144). It has been suggested that the house urns could represent real houses (Silvén 1954:22) even though as Stenberger already in 1964 wrote “house urns has probably never been meant as reproductions of real dwellings” (Stenberger 1964 in third edition 1979:256. My translation). Initially the house urn tradition came from southern Europe and the Italian peninsula (Arwidsson 1952:33, Sabatini 2007:170) and according to Sabatini (2007:122) the earliest urns appears in the Baltic zone at the end of period IV and this could be understand as “Ship-shaped stone settings are generally considered linked to a travelling-related symbolism and we may hypothesise the local house urns connected to travelling experiences and contact with foreign realities. By and large, the supposed receptiveness of the environment may explain why Gotland house urns are amongst the oldest evidence of the phenomenon in the north of Europe”(Sabatini 2007:145).

The above described monuments with their contents are common on the island and besides the representation of monuments there is an abundance of finds of bronzes; in total there are 64 Bronze Age hoards consisting of weapons, jewellery, and tools, all made of bronze (Hallin 2002:71).
Settlements from the Bronze Age

“It is frustrating that settlements can be difficult to find and that the candidates which are suggested are not easy to date. For that reason more attention has been paid to the distribution of monuments, as this can shed some light on where and how people lived. But much of the difficulty arises because it is commonly supposed that certain areas were used as “ritual landscapes” and given over to commemoration of the dead. That cannot be taken for granted, and the argument needs to be sustained”. (Bradley 2007:168).

The quotation could as well be a description of the situation concerning settlements from the Bronze Age on Gotland! But in a more thoroughly observation the monuments are of importance when in close relation to some of them and to the grave fields, there are remains of fossilised fields and mounds with fire cracked stones. The latter is usually an indication of settlements during the Bronze Age on the island; in them one can find debris from household activities such as sherds of pottery, bones from domestic animals and burnt and fire cracked stones. They have been used in the hearth, as cooking stones, and after they have been heated, the stones have cracked in a very characteristic way and thrown in a heap. This is so far; the nearest we come to settlement and houses from the period on Gotland. (There are scattered finds of postholes from a few sites on the island but none of them can be interpreted as house foundations, cf. Wickman 2001). However, fire cracked stone heaps could have other functions, for example tied to ritual or bronze casting activates (for example see the article of Martinsson-Wallin in this publication).

One of the main areas of my investigations is Liffride, in Alskog parish, situated on the east coast of the island. The site is today a forest region and during the 1980s a special inventory was made due to damage on the ancient remains by an extensive felling of trees and land processing in the area (Carlsson 1983). At the same time other remains were discovered. The site consists of graves, field systems and mounds with fire-cracked stones (Figure 1). Especially parts of the field system were damaged although the felling made them visible and much easier to map. The first excavations were carried out from 1994 until 1997 with the aim to investigate a few of the mounds with fire cracked stones at the site (Lindgren 1994, Goldhahn 1995, Hallin 2002).

I have carried out subsequent excavations at Liffride site from 2003 and onwards, which have focused on a small grave field consisting of two stone-ship settings (Figure 2) and two stone settings (Runesson 2010).

In the five excavated mounds with fire cracked stones on the site there were finds of pottery, animal teeth, animal bones and grinding stones, all which could be linked to household debris. Radiocarbon and TL -datings confirm that they were in function during the Bronze Age.
Figure 1. Map of the site in Liffride, Alskog sn (Hallin 2002:37).
The interpretation is that the mounds were not in use at the same time, but express that the settlement moved within the site at certain intervals. Due to the aggregates of graves and the areas of the fields, it points to the fact that the site was a peripheral settlement with just a few small hamlets functioning at the same time. The preliminary results from the excavated graves strengthen the interpretation that this site represents a peripheral settlement.
settlement. In one of the two stone ships cremated bones of human skeletal remains was
found placed in a ceramic vessel but not accompanied with any grave goods. In the other
ship there were scattered cremated bones but no proper burial. In the smaller of the two
stone settings a cremated adult person were buried together with the remains of an un-
burnt dog. The larger stone setting with a diameter over 13 m contained at least two
cremations and one inhumation. In context with one of the two cremations, a twisted
necklace most probably dating to period IV, and a small fragment of a bronze band (an
arming?) where found (Runesson 2010). This represents the first finds of bronzes at this
site and points to the fact that bronzes were items that seldom were placed in the graves
as gifts, and most probably, not common at these small settlements. On other sites on
Gotland the same pattern can be seen, with contemporary graves, fossilized fields and
mounds with fire cracked stones and those excavated also dates to the Bronze Age; some
of them gives a time span from the Late Neolithic until the Early Iron Age (Hallin
2002:91).

Bradley (2007:168) gives examples of that the zones of the living areas and monuments
were not far apart, even though it differs from region to region within England. Of
course, one cannot directly translate these conditions to Gotland, but still it support the
argument that the settlements from the Bronze Age are to be found in the vicinity of
contemporary monuments. The general conclusion is that evidence from the grave
monuments alone does not provide enough data to make general statements about the
Bronze Age society. But when the graves are contextualised with other remains from the
period one can start to discuss Bronze Age settlements on Gotland, leading to a more
fully understanding of the social complexity of Bronze Age Society on the Island.

Rock carving sites in a settlement context

There are three sites with carvings known on the island, in Lärbro, Fårö and Lye parish-
es. The latter consists only of footprints and cup-marks. Until 1987 the only “real“
known site was at Hägvide in Lärbro parish. This was discovered 1910 and contain
about 20 depictions of ships, 4 pairs of feet and 4 axes with their handles (Nordin 1911).
To protect the Hägvide carving from surface erosion, the authorities decide to cover the
site in the 1990s. The information sign is still at the site, and if you are not familiar with
the events, one must get rather confused at this site. We can also state that air pollutions
and the climate change indeed also threaten this type of cultural heritage. A cast has been
made of this rock carving area and a true copy was made and was earlier displayed at the
courtyard of the Historical museum of Gotland (Figure 3).

In 1987 a similar rock carving was found on Fårö, a small island making up the northern
tip of Gotland. It consists of six ships, one animal, one sword, nine fragments and 18
cup-marks (RAÄ nb. 379, TJ 5i, Broström 1999). The ship-type is similar to a depiction
on a sword from Rörby in Denmark and this type is dated as the earliest, from late
Neolithic/early Bronze Age. The figures on the site are similar to those found in Simris,
Scania in the south of the Swedish mainland (Burenhult 1989: 81). The limestone surface is soft and the carving is difficult to distinguish, and the impression is that this 3000 year old remain is very fragile. This could be an explanation why there are so few carvings to be found on Gotland.

So, does this means that rocks carvings on Gotland have eroded due to that they were placed on soft lime stone, which erodes easily and also in modern times have been eroded by pollution? Or does it mean that this tradition newer was strong on the island? The sites on Fårö and in Lärbro were close to the sea during the Bronze Age and there are an abundance of monuments from the same period in the vicinity of the carvings. In the Lärbro area this also includes two settlements sites. One can also point to the fact that there are no hoards found, either from Lärbro or Fårö (Hallin 2002:26). There are finds of bronzes from graves and a few single finds but no finds to be interpreted as sacrificed items. So this could mean on these two sites that the tradition of sacrificing bronzes was expressed in depicting them instead.

The sites were located close to the sea and another interpretation is that these sites represents places were the exchange of bronzes took place. It has been suggested that
there were no indigenous metal sources in Scandinavia neither tin nor copper so the bronzes were imported from outside the region. However, there are finds of copper, which currently are studied among others by Johan Ling, which could provide new interesting interpretations on exchange (Göteborgs Universitet 2010). According to professor Malmer (1993:124) he suggested that the bronzes must have been exchanged by personal contacts at certain sites, and he quote what Karl Polany (ibid.) mentions as “port of trades”. These sites must have been plenty in Scandinavia and Malmer says the most significant site of this kind is Nämforsen in northern Sweden, one of the largest rock-carving sites in Northern Europe were there are more than 1400 figures mostly elks, but also humans, birds, footprints cup-marks and so on. This site is also an example of a mixed content, consisting of tradition of both hunting rock carvings and farming rock carvings (ibid).

Another plausible explanation could be that this tradition, carving pictures onto the rock, never was strong on Gotland. Could the representation of stone Ship Settings from the Bronze Age on the island be some sort of answer? The transformation of the idea of carving ships could as well have been manifested in real huge stone ships and in some of them the cremated remains were buried in a house urn (c.f Hansson 1927:87, see Wehlin this publication).

To sum up

In this article settlements and settlement-patterns from the Bronze Age on Gotland is in focus as well as other issues such as the “non-representation” of rock-carvings and stone ships with their content of house urns. To date, there is still no certain house remain from the Bronze Age on the island but I claim that there are traces of areas where people lived their lives, and died, during Bronze Age. i.e. on various sites on the island one can see the ancient remains arranged in a certain pattern and it consist of contemporary grave-forms, mainly as cairns and stone-ship settings, fossilised fields and mounds with fire cracked stones. The mounds with fire cracked stones with their content of debris from the household and the fields can be interpreted as “domestic” and connected to the daily live. The graves represent the opposite but together it forms a Bronze Age landscape. The site Liffride in Alskog fits well into the pattern, but is interpreted as a peripheral settlement containing no more than one- or two small hamlets functioning at the same time. These settlement activities dates from the Late Neolithic until the earliest Iron Age. Most certain, there were larger and wealthier settlements during the Bronze Age, but they are still to be found. My investigations point to the fact that the Bronze Age societies on Gotland can be interpreted as containing both small farming hamlets and as complex settlement and structures. One explanation must not out exclude the other. Probably, as always, there were both: the more central settlement areas are most likely at the same sites as the central ones from later pre-history until historical time.
The island though, in the middle of the Baltic Sea, had well established external contacts already during the Neolithic times as we for example can see in exotic goods found in graves at the Pitted Ware site Ajvide in Eksta parish and hoards of large flint axes on the Island. These finds point to extended interaction occurred with other societies round the Baltic Sea (Österholm 1989). The monuments from the Bronze Age still dominates the landscape on various sites and bronze artefacts, from graves, as surface finds and from hoards, testify of continued external contacts. Meeting points for exchange must also have been of importance where certain rituals could take place, and this maybe can shed light on the few rock-art sites on Gotland. The two carvings at Lärbro and on Fårö, close to the sea then, could express this. But as discussed, the tradition is suggested to just be adopted by few and others built “real” ships in stone instead of carving depictions of them on rocks. Some of the stone ship builders took up the idea to form the urn for their deceased in a shape of a house. In all, the sea voyages brought people back and forth from the Island loaded with new goods and ideas, and today their efforts can be still be seen in the landscape as monuments, and more mundane remains such as field-systems and mounds with fire cracked stones, besides the many finds of bronze items.

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Approaching the Gotlandic Bronze Age from Sea. Future Possibilities from a Maritime Perspective

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Abstract - Although the Bronze Age is a period when travel and interaction over large areas has been intensively discussed, not least in the Baltic Sea, the role of seafaring and maritime knowledge in the society has seldom been considered. Maritime archaeology has been viewed as peripheral in the archaeological discussion. The sea has been considered as a boundary when interpreting landscapes. More recently a maritime cultural landscape, a seascape, has developed in the archaeological discourse. In this paper I aim to apply and discuss such perspectives in the Baltic Sea region during the Bronze Age, with particular focus on the Gotlandic stone ship settings and their place in the secular and ritual landscape/seascape.

Introduction
In this paper I aim to use a maritime approach to find new ways to interpret certain elements of the Gotlandic Bronze Age (c. 1700-500 BC). I find it quite surprising that the maritime perspective often is overlooked when interpreting the Bronze Age period, especially when considering Gotland, which is an island in the Baltic Sea. The Bronze Age is also a period when travel and interaction over large areas has been intensively discussed by archaeologists and the ship dominates the symbolic world.

Interactions and overseas contact required movements over open water or possibly ice. In previous archaeological research the sea has generally been discussed as a boundary. The maritime archaeology and seascape has been viewed as peripheral in the discussion. However, in recent years, Christer Westerdahl (1996, 1998, 2005) has argued for an extended use of maritime archaeology terminology when analysing the prehistoric social organisation. He, for example, stresses that the Baltic Sea is a social arena and considers the seafaring as a social action. People living by the sea, and who were possibly tied to a maritime institution, have very likely created beliefs, myths, and gods that are inspired by the sea.

In a recent dissertation, Johan Ling (2008) argues for a maritime understanding of the rock-art in south-western Sweden (Bohuslän). The large quantity of rock-art observed on the Swedish west coast is not found on Gotland. Instead another feature of interest appears on Gotland during the Late Bronze Age: the stone ship setting. This monument I will simply refer to as “ship setting” eliminating the prefix “stone” for the sake of simplicity.

In the study below, I will discuss the seascape of the Baltic Sea region during the Bronze Age in general, and the ship settings on Gotland, their monumentality, and their place in
the secular and ritual prehistoric landscape/seascape in particular. As a “case study” I use the north-east area of Gotland where a water system is located. It includes the largest river on Gotland known as the Gothem River, which in turn includes the Hörnsne River and continues through the wetlands of Lina bog. It runs north-east and has its outlet in the sea at the bay of Vitviken. The area holds the largest cluster of ship settings on the Island, including the well-known grave of Tjelvar; known in the sagas as the founder of the Gotlandic settlement (Nihlén 1928).

This article is inspired by three different papers I have presented at the Nordic Graduate School in Archaeology, Reykjavik, Iceland (August 2008); the 14th Annual Meeting for the European Association of Archaeologists, Valletta, Malta (September 2008); and at the Baltic Rim Seminar in Visby, Sweden (October 2008).

Maritime Archaeology

Traditionally maritime archaeology has focused on ships and their technology and function (e.g. McGrail 2001). Keith Muckelroy defined it as “The scientific study of the material remains of man and his activities upon sea” (1978:4). Maritime archaeology has earlier been viewed as a marine specialisation. The archaeological questions that it could answer became peripheral in the academic discussion. The sea was considered a boundary/obstacle when interpreting landscapes. The coastal zone and the maritime environment were thus reduced to an in-between space. This narrow interpretative perspective has been discussed by Westerdahl who introduced the term Maritime Archaeology (1978) which replaced the former term: Marine Archaeology (1996:2). Muckleroy (1978) has also raised the question of whether there is need for a theoretical maritime archaeological discourse regarding a maritime cultural landscape (seascape) as is currently evident (e.g. Westerdahl 1996, 1998, 2005, Ballard et al 2003, Rönnby 2003, 2007, Nordenborg Myhre 2004, Farr 2006, Kvalø 2007, Widholm 2007, Ling 2008).

When studying maps of suggested prehistoric diffusion, there are arrows pointing in various directions, borderlines drawn, and areas marked in different colours suggesting the spread and appearance of artefacts and raw materials (Farr 2006:86pp). Often the space in-between is filled with water. Material was circulated, but people carrying these objects, their individual and cultural knowledge, their skills and beliefs are usually only briefly discussed. One may ask what role seafaring and maritime knowledge played in the society and social organisation, especially on Gotland with its insular status. According to Robb and Farr (2005); what archaeologists consider “... ‘trade’ may often be a by-product of travel and interaction undertaken for other purposes” (Farr 2006:90).

Bronze Age Ships

Until present, just a few seagoing vessels from the Bronze Age have been found in connection to the Baltic Sea (Rieck 1995:125, Sylvester 2006:101-102). In fact, one part of a prehistoric vessel was recently found on Gotland. It was a 4.5 m long and 0.4 m broad
dugout found in the Martebo bog in Lokrume parish in 2002. The \(^{14}\)C –analysis, calibrated at two sigma, gave the dating to the Late Bronze Age - Early Iron Age c. 720-390 BC (Figure 6). According to the dendrochronology report, the age of the wood was considered to be 140 -160 years. However, this period in prehistory shows the ship as a dominant element of the visual culture; carved in stone, decorated on bronze artefacts or built up as stone constructions. These ships, or boats, have according to Ballard et al (2003) divided the scholars in mainly two camps. One perspective highlights the practical explanation considering the advantages of travel by sea rather than moving over land. The ships visualised in different media may refer to factual ships and the variety could indicate different functional ships (Rausing 1984, Capelle 1986, Berntsson 2005). It is furthermore suggested that the area to a certain extent was dependent on southern metal sources (Glob 1969, Malmer 1981). The lack of copper and the large amount of deposited bronze artefacts in the Scandinavian Bronze Age suggest that the raw material (or objects) must have been imported. The style, which can be seen on many bronze objects of the region, show similarities with bronze artefacts in central and north-east Europe (e.g. Kristiansen 1987, Larsson 1994). With this perspective, the maritime connection has primarily been discussed in relation to economics and politics (e.g. Randsborg 1993, Earle 1997, Kristiansen 1998). The other viewpoint implies a cosmological approach to the discussion stressing the importance of placing the ship in context, not referring to interaction, navigation and long distance exchange, but seen in context with other features such as graves and bronze deposits. Flemming Kaul (1998, 2004) has for example developed a Bronze Age cosmology based on the journey of the sun. He uses a quantitative study of depicted scenes on bronze artefacts, mostly razors from Denmark, where the ship appears as the helper of the sun. The relationship between ships and circular motifs, usually interpreted as the sun, is also visible in Scandinavian rock-art. The discussion of a Bronze Age sun cult and the journey of this heavenly body had its starting point in the studies of rock-art scenes by Oscar Almgren (1927) and subsequent studies by Åke Ohlmarks (1963). The rock-art, depicting ships, also appears in places where the boundary between sea and land has a unique role in local cosmology as a meeting place between the living and dead (Helskog 1999, Nordenborg Myhre 2004:177pp, Ling 2008:232pp). This meeting is also noticed in the long lived tradition of burying people inside boats, which may go back to the Mesolithic period (Skaarup 1995) continuing on in graves formed as ships or boats (Artelius 1996). The rock-art panels with depictions of ships also demonstrate close relationships to burials (Ling 2008:154). A relationship between ships and burials is also found in the well documented graves of Kivik and Sagaholm, where images of boats have been found inside the grave (e.g. Randsborg 1993, Goldhahn 1999, 2005).

These two approaches should, as Ballard et al. (2003:385-386) argue, complement one another other, but have not done so over the years. More recently, Kristiansen and Larson (2005), discuss the significance of travels and sea journeys in the political and cosmological order of Bronze Age society. They are influenced by the work of Mary Helms (1988), who argues for a relation of geographical distance and the value given to ideas.
and goods obtained through travel. This discussion of long-distance maritime travel beyond the mechanical and physical aspects of interaction has, as I mentioned earlier, increased during recent years, especially by research in the British Isles. This includes contextual landscape analyses by finding sites of Bronze Age boats at North Ferriby, Dover, Kilnsea, Caldicot, and the River Test (e.g. *World Archaeology* 2004, Clark 2004, 2009). In this paper I will use the maritime and seascape perspectives to broaden the discussion of the Baltic (Gotlandic) stone ship settings. These monuments are so often clearly associated with burials. This will hopefully contribute to the discourse and reinterpretation of some aspects of the Gotlandic Bronze Age in a constructive way.

**The Gotlandic Ship Settings**

Approximately 380 ship settings are known on Gotland and c. 70 of them are excavated to some extent. The feature is traditionally dated to Montelius period IV-VI (c. 1100-500 BC) and interpreted as graves for one or several individuals (Hansson 1927, Pettersson 1982, Capelle 1986, Artelius 1996, Hallin 2002). They are located mainly along or close to the coast-line. The number of ship settings at each site varies, from one solitary ship to up to nine vessels in close connection.

There are large variations seen in the appearance of the Gotlandic ship settings. Harald Hansson (1927) makes an attempt to explain the variation with chronology and change over time. This is an explanation subsequent scholars have discussed and used to understand the phenomenon and its variation (e.g. Nylén 1958, 1972, Capelle 1986, Artelius 1996, Skoglund 2008). These researchers have focused on the phenomenon itself and raised questions concerning the ship as a symbol in both the religious and everyday life. Still there is no evident explanation of the large variation observed in the ship settings, even though some differences and change can be explained by chronology. It seems more likely that different types, that we today entitle as ship settings, were in concurrent use during the Late Bronze Age.

The Gotlandic ship settings succeeded the prominent cairns of the Island as manifestations and burial grounds. Even though these stone ships seem to appear “from nowhere” in the landscape it is relatively clear that the cairns were still in use (as burials) during the Late Bronze Age (Hallin 2002:85). The ship setting tradition appears at the same time over a large geographical area; from the Baltic Sea region to the south-west of Sweden, and also to a certain extent in Denmark and Norway (Capelle 1986, Artelius 1996, Skoglund 2008, Wranning 2006). The cultural expression of making stone ships is initiated at the approximate time of the Montelius period III and corresponds chronologically with the change to the cremation burials. The relationship to and treatment of the dead change in the Late Bronze Age phase. Tore Artelius (1994:54) point to the fact how well the symbolic ship fits the tradition of cremation burials as the vehicle for the dead on their journey to the “underworld”. This tradition might also have communicated a new way of viewing the transition of the soul, as a journey from the body to the “other
side”. Although this interpretation seems reasonable, it is clear that even though the bodies were cremated not all were buried in a ship. Important to consider is also the fact that no burials have been found in 14 of the 54 properly reported excavations of ship settings on Gotland. Regarding the emergence of the ship setting tradition, Artelius (1996:64-65) discuss their appearance as a result from distant cultural influences. The areas of origin might, according to Hernek (1994:19), be discussed in association with the Gotlandic house urns, which are similar to those in central Europe. On Gotland these urns most often are found in ship settings (Arwidsson 1952, Pettersson 1982, Sabatini 2007).

It is of course impossible to overlook distant influences as we see a wide distribution of the ship symbol in the Scandinavian Bronze Age. Depicted on bronze artefacts and in rock-art the ship is the dominating symbol of the period. In Central Scandinavia, from the Lake Mälaren area in the east, to Bohuslän, Østfold and Rogaland in the west, the ship is an important component in the rock-art (e.g. Malmer 1981, Coles 2005, Goldhahn 2006). In South Scandinavia, ships are engraved on bronze artefacts (mainly razors), with a distribution mainly in Denmark (Kaul 1998, 2004). On Gotland, on the other hand, no artefacts of bronze with depictions of ships are known and only two rock-art sites with ships have been found, one on Fårö (RAÄ no 379:1) (Figure 1) and the other in Lärbro (RAÄ no 303:1). The ship expression instead appears as ship formed stone settings here.

A Maritime Institution
Placed along the coast on the Ancylus and Litorina transgressions (Hansson 1927:63) the ship settings show the same geographical distribution as the large stone cairns, but there are also cairns with a distribution reaching the inland water systems (Stenberger 1945:58, Hallin 2002:19pp). The relationship between clusters of Bronze Age monuments and places like inlets and river-mouths, which were suitable for seafaring, was stressed by Erik Nylén already in 1959. In his proposed research program concerning the Gotlandic cairns and a Bronze Age long distance trade, Nylén recognised a possible maritime institution (1959:25-26):

"It is tempting to divide the Nordic Bronze Age into what fiction might refer to as ‘two cultures’. One trading culture, concentrated on the coasts and in the areas of political, commercial importance. This culture has many differences, but also similarities with the second culture, the inland culture, belonging to the stock-raisers and farmers who hungered for Bronze, which enabled the existence of the trading culture."(My translation).

Hallin (2002:26) furthermore discusses the possibility that the few rock-art locations on Gotland may indicate meeting places for people travelling to and from the Island, places where goods could be exchanged, and where sharing of ideas, knowledge and ideological beliefs may have taken place.
It is noteworthy that the two rock-art sites with depictions of ships found on Gotland are located in a maritime environment. Both of these panels can be dated to Montelius period III, at the latest, by means of the depicted ships (e.g. Glob 1969, Kaul 1998, Ling 2008, Malmer 1981, Goldhahn and Ling, pers. comm. 2009). This early dating, places the rock-art panels in line with the traditional view of the first appearance of the ship settings. It is of interest here to emphasise Harald Hansson’s (1927:86) view of that the idea of carving ships in stones transformed on Gotland to the actual building of stone ships in full scale models.

When studying ship settings closer, I argue that we should abandon the idea of the ship settings as simple burials related to the death cult in favour of a more contextual understanding using a maritime perspective. In line with Capelle’s ideas (1986), I suggest that the ship settings be placed in the context of a maritime social institution.

**Lina Bog and the Gothem River**

When studying historical maps from the 17th and 18th century Gotland appears as a “sea/water” landscape (Figure 2, Right). There is an inland landscape consisting of water mirrors, wetlands, rivers etc. This “sea/water” landscape has also changed over time by the complex shore displacement due to isostatic uplift. By examining the Litorina transgression, created during the Litorina phase of the Baltic Sea (maximum 5000 BC) (Burenhult 1999:193 pp), it is possible to gain insight into this change. Harald Hansson makes an attempt to re-create a possible Bronze Age shore-line by using 20 % of the Litorina transgression as standard for the isostatic uplift after the Litorina maximum (1927:90pp). The major uplift has taken place on the north-west part of Gotland with the least effect seen on the south-east part, indicating a difference of c. 10-15 m. Hansson estimates the Bronze Age shore-line to c. 5 m.a.s.l. in the north and 2 m.a.s.l. in the south. This interpreted shore-line seems too low when examining the visible prehistoric
remains traditionally placed in the Bronze Age. The large cairns situated on the moorland at Uggarde, Rone parish (south-east Gotland), including the prominent Uggarderojr, are all located above the 7.5 m elevation (Martinsson-Wallin and Wehlin, 2010). The Litorina maximum in the same area measures 16 m.a.s.l. (c. 47%). If instead applying that percentage as standard of Litorina maximum, it gives a shoreline on the northern parts of the Island of c. 12 m.a.s.l. during the earliest phase of the Bronze Age (Sardén Johansson 2009:19). Another aspect of landscape change to consider is the fairly rapid change of the inland “sea/water” landscape that took place during the drainage campaigns in the 19th and 20th centuries with the aim to increase the arable land for cultivation.

One interesting water system that appears on the historical maps extends from the central inland parts of the Island in a north-east direction to the Bay of Vitviken (Figure 2. Right). There is a hypothesis of the existence of an old sailing-route along the same water system (Ohlsson 1984:30). Even though this hypothesis have to be evaluated, interesting relationships emerge when examining the spatial distribution of the Gotlandic ship settings.

Figure 2. Left: Spatial distribution of ship settings and the “case study” area (marked rectangular). Right: Carta von Gottlant:1646. Historical map of Johan Meyer (eg Johan Fredrik Meijer).

When examining the spatial distribution of the ship settings a couple of clusters appear and the most distinct of these correspond with the aforementioned water system (Figure 2). This area is located in the north-east of Gotland and in the parishes of Boge, Gothem,
Hörsne and Vallstena. In the central parts of the Island the water system consists of the Hörsne River which later becomes the Gothem River (the largest river on Gotland). The river runs north-east through the wetlands of Lina bog, and continues to its mouth at Åminne and the Bay of Vitviken into the Baltic Sea (Figure 4). The Lina wetland was, prior to the draining campaign in 1947, the largest on Gotland, c. 900 hectare, including the Lina bog and Råby (50 hectare) (Sernander 1939:250pp). Today the area consists of farm land and wetlands, which floods during the winter season and is reminiscent of a long gone water supply (Figure 3). This area appears as a maritime landscape with a large inland wetland, bogs, river-systems, river-mouth, coast and sea situated in a rich Bronze Age landscape. The area might also have been important as a communication link between the east and west coast through historical times. I believe that it is not a coincidence that one of the largest clusters of ship settings, almost 15 % of the total number of such monuments, appears here.

The Uppgarde Ship

When examining the spatial distribution of the ship settings in the “case study” area (Figure 4) one immediate pattern stands out. Out of 54 known ship settings only 6 are located south of the Gothem- and Hörsne rivers. Also the cairns show a clear spatial dominance north of the river. Even though most of the ship settings cluster towards the coast, one interesting area is located north of the former Lina bog marked on the map (Figure 4) and is known as the Uppgarde Ship site. In the vicinity of this site two cairns located at Nygårdsrum in Vallstena parish (RAÅ No. 73:1) was investigated during the 1970’s. The smaller stone setting, measuring 12 m in diameter, contained a stone cist with approximately ten buried individuals and numerous artefacts including a flint dagger. The larger monument (30 m in diameter) contained a complex inner construction with nine concentric circles surrounding a stone cist containing three buried individuals. After the stone packing was removed, a smaller burial ground appeared underneath. It contained roughly ten burials with approximately twenty individuals, several infants. On
the basis of found artefacts, Hallström dates the stone settings and burials to the transition between Late Neolithic and Early Bronze Age. Under the cist in the larger stone setting 15 postholes were found. They were placed into an oval shape and interpreted by Hallström as the remains of a type of “death house” raised over the burial cist (Hallström 1971:114-115).

During extensive investigations including large areas of soil stripping in 1977, dark spots appeared in the sand close to the above mentioned features (Figure 5). The dark contour in the sand formed an oval feature and was interpreted as the foundation of a ship setting (Englund 1979:53). The feature measured c. 45 metres in length and was orientated WNW-ESE. Inside the feature two cremation burials were found. The graves included no artefacts and a relationship between these graves and the “ship setting” could not be verified. Outside the construction a pit containing charcoal and pottery surrounded by stones was found. A sample (St-7010) obtained for $^{14}$C –analysis calibrated at two sigma gave the dating 1900-1450 BC (Figure 6).
Close to the “ship setting” a line of 15 oval features (c. 1.8 –1.2 m) interpreted as hearths were found. These were filled with fire cracked stones and contained a bottom layer which included large amounts of charcoal (Wickman 1978:97f). Two samples (St-6525, St-6526) were $^{14}$C analysed and, calibrated at two sigma, gave the date 400-900 BC (Figure 6).

<table>
<thead>
<tr>
<th>Lab. No.</th>
<th>Location</th>
<th>Type:</th>
<th>Material:</th>
<th>$^{14}$C – dating (BP)</th>
<th>cal. BC (1 σ)</th>
<th>cal. BC (2 σ)</th>
<th>Reference:</th>
</tr>
</thead>
<tbody>
<tr>
<td>St – 6525</td>
<td>Vallstena Uppgarde 1:20</td>
<td>Pit with fire cracked stones</td>
<td>Charcoal</td>
<td>2540 ± 95</td>
<td>801 – 536</td>
<td>836 – 404</td>
<td>RAGU (8978), Lamell 1979</td>
</tr>
<tr>
<td>St – 6529</td>
<td>Vallstena Uppgarde 1:20</td>
<td>Pit with fire cracked stones</td>
<td>Charcoal</td>
<td>2590 ± 95</td>
<td>841 – 542</td>
<td>809 – 413</td>
<td>RAGU (8978), Lamell 1979</td>
</tr>
<tr>
<td>St – 7010</td>
<td>Vallstena Uppgarde 1:20</td>
<td>Pit surrounded by stones</td>
<td>Charcoal</td>
<td>3380 ± 95</td>
<td>1858 – 1531</td>
<td>1907 – 1454</td>
<td>RAGU (22879)</td>
</tr>
</tbody>
</table>


A settlement area was found in close vicinity to the earlier mentioned features. The area which covered 160 x 10-30 m contained pits, cooking pits, hearts and pieces of flint (RAÄ No. Vallstena 223:1). Indications of settlement and graves have also been found 200 m north-east of Vallstena 223:1. In a relatively large area, three stone settings and ten postholes were detected. These stone settings contained burnt bones, pottery and pieces of bronze (Vallstena 224:1). Furthermore, at Nygårds in Vallstena, a prominent razor with a horse-head handle has been found (Figure 7. Hansson 1927:25, Pl. 9). This type of bronze razor is quite common in the Nordic area (cg. Montelius 2002[1917] MM 927-930 and 1013-1015). Based on the curved shape, scholars have interpreted them as representations of ships (e.g. Glob 1969:55, Kaul 1998:93).
Communication and Meetings (Discussion)

The location of the *Uppgarde Ship* is interesting when adding the geological data. The Litorina transgression extending from the north fuses at this location with a small esker made up of glaciofluvial gravel. Both these geological formations have until present been used as landmarks and trails in the landscape. These two trails come together at a point which attaches to a former large inland lake connected to the sea via the Gothem River (Figure 3 and 4). This corresponds with the thinking that Bronze Age cairns located along the coast and placed high in the landscape were used for navigation (e.g. Hansson 1927:63, Stenberger 1945:58, Nylén 1959:9-10, Hallin 2002:21, Thedéen 2004:33pp). This visually connected the settled areas with the sailing routes and created an interconnected world of cosmological and political endurance (Kristiansen 2007:60). Johan Ling references the aforementioned in his discussion of the spatial connection between rock-art and old roads, which appear to end by the sea and “...form a pattern of movement” (2008:236).

I will now leave the discussion of barrows and cairns as territory makers (cg. Carlsson 1983:26-27, Bertilsson 1987:181) and expand the discussion by focusing on a communicating landscape or seascape. By doing so and raising the idea stressed by Hallin of possible meeting places around the Island (2002:77), referencing Karl Polanyis *Ports of Trade in Early societies* (1963), new interpretations can be made. Might the significant *Uppgarde Ship* and its surrounding features indicate such a meeting place?

The Nygårdsrum and Uppgarde area stands out as exceptional through continuity that can be traced far back in time. The area may be discussed in terms of varied kinds of meetings, but if we want to hold a seascape discussion we must first move towards the coast where the sea meets land. According to Lise Nordenborg Myhre (2004), meeting places or “nodes” should be placed at strategic locations in the landscape. These places might have endings and beginnings, where the sea ends and the land starts for example. Such a node marks a liminal shift between different elements. Ling emphasizes the shore-zone as a “…dynamic boundary, a physical edge or ‘third space’ between three dominant spatial formations: sky, sea and land.” (2008:232). The shore-zone possibly created different kinds of social actions: for example arrival/departure ceremonies in
combination with transitional rites, meetings etc. Kurt Helskog (1999) extends the discussion concerning the meeting of three dimensions to include the cosmological world and a meeting place for the spirits of these dimensions. Helskog emphasizes ideas about certain structural similarities between the cosmological and the physical world of people (1999:81).

Kerstin Cassel recently raises interesting ideas concerning meeting places and continues the earlier mentioned discussion of their location in places related to inland routes (Cassel 2008:84pp). According to the earlier discussion of the “case study” area as a possible inland route, the Gothem River-mouth could be such a place. When examining this area, an interesting feature appears south of the river-mouth referred to as the Gothenhammar Stone Wall (RAÄ No. Gothem 131:1, see Figure 4). The wall is an exceptional feature, which fences off a former peninsula and meets the visitor approaching by sea from the south. The wall is almost 500 m long, measures 4-8 m in width, and is orientated in a north-south direction. Today the wall ends at about the 12 m.a.s.l. elevation, which corresponds with the earlier suggested Bronze Age coast-line for this area. For a more concluding discussion of the Gothenhammar Stone Wall see Paul Wallin in this publication.

If we interpret the Gothenhammar enclosed area fenced inland by the wall and otherwise surrounded by the sea, it covers an area of c. 30 hectare. This is quite a large area and does not contain any further prehistoric remains or reported finds. The wall has been interpreted as some kind of defence construction, mostly due to the similarities with the Iron Age hill-fortifications on the Island (e.g. Manneke 1983, Olausson 1995). If the wall is to be interpreted as a defence structure, I find it difficult to understand its location or which side the purpose was to protect. According to the excavation profile drawing of the wall from 2009 it appears that the interpreted plank was situated on its east side (Wallin this publication.). There may have been a smaller platform on the other (west) side of the plank. West of, and on the inland side of the wall, there is also a row of shallow ditches. The sea side area of the wall consists mostly of inhospitable limestone shore gravel and was most probably during the Bronze Age an infertile and exposed place.

If we instead consider a maritime perspective, the location is a perfect navigational spot and landing place. Cassel argues that meeting places should be located in unique areas in the landscape, in particular if a large group of people arrives (Cassel 2008: 84pp). Additionally, meetings would have required many forms of rituals (Helms 1988:25). This is of importance when considering the possible different backgrounds of the visiting people (Vikstrand 2001:234). They encountered a totally new world, other norms and values, a world filled with stories, myths and traditions, some which may have been more or less familiar. The latter were most probably connected to seafaring, coast life, foreign people, and places. As Chapman and Gearey suggest (2004), a more ritualised view of seafaring is needed. To be at sea has in many cultures been viewed as a deeply ritualised activity bound to traditions and superstitions. Rituals associated with maritime travel can be
traced both to physical and conceptual places (Ibid:455). To disembark at shore or in harbour today as well as in prehistory, accurate navigation is one of the main skills needed. As soon as land is visible one will need a pilot; a navigation technique which Needham (1971) refers to as “non-instrumental,” the accurate one when discussing the Bronze Age. Chapman and Gearey (2004:456) suggest that the barrows at the Kilnsea boat plank Bronze Age site may have served to help and welcome seamen, both in a practical and spiritual sense, as markers in the transition zone between sea and the estuary. From this point of view, Gothemshammar could be interpreted as a kind of “transition zone”, a liminal space between the island society/societies and the visitors. The wall then becomes a kind of ritual border which in some way protected both sides. It is of great interest that the initial $^{14}$C dates from the recent excavations gave a somewhat unexpected age to around 1000 BC. (See Wallin in this publication for details).

**Discussion of Boundaries and Movement**

I will now leave the Gothem River-mouth and move inland along the proposed water route to expand the discussion of the significance of borders/boundaries and movement. Lines and paths may, as Nordenborg Myhre expresses (2004:32-33), be seen as channels of movement; coast-lines, rivers, valleys etc. Movement is an important factor when understanding space and the cognition of landscapes. How we move towards something involves our visual perception (Ibid:32). The significance of rivers, even relatively small ones, as “lines” or “paths”, is discussed by Marianne Lönn (1999) in relation to place names in Bohuslän. According to Lönn, names of rivers might be older than settlements. It seems the oldest villages were named after the river, but this changed during medieval times when the settled areas named the rivers. As Lönn (1999:146-147) mentions, this could demonstrate the significance of relationships to rivers in earlier times. Rivers could be discussed in terms of landmarks and bases for orientation in the landscape.

This is interesting in association to my “case study” area where the Gothem- and Hörsne rivers definitely marks a border, or a path in relation to this landscape. Almost all ship settings and cairns appear, as mentioned earlier, north of the former lake and river. This pattern may be associated with eschatological ideas and the journey to the “underworld” or the “other side”. This is a kind of transition process, which according to Artelius (1996:10-11) could be applied in all Bronze Age graves where the ship symbol appears.

Christopher Tilley discusses the crossing of the river using another approach related to the complex rock-art panels at Brådön, “…a boundary which must be crossed between the world of the profane and the world of the sacred” (1991:138). A similar interpretation concerning the landscape has been discussed by van den Noort (2004) related to sites where two Bronze Age boats have been found in the Humber estuary, England (North Ferriby and Kilnsea). Van den Noort uses an ideological concept arguing that the two different areas of the landscape represents two different parts of social activity, one ritualized and the other non-ritualized. In his paper Van de Noort discusses seafaring as
a ritualized activity, a “rite of passage” and the sea as a liminal space near the monumental landscape in Kilnsea. In North Ferriby on the other hand, the landscape appears totally different without any visible ritual features. He therefore interprets this site as a boat-building and repairing place belonging to the daily life. In an answer to Van de Noort’s paper, Chapman and Gearey (2004) re-consider this view and argue for a broader consideration of boat-building and seafaring. They place the two sites in-between ritual and practical behaviour reflecting a kind of symbiotic relationship, the boatbuilding of North Ferriby at one stage and the monumental landscape of Kilnsea at another. The latter served both a practical and ritual function using the landscape during navigation and in rituals like arriving/departure ceremonies.

If we apply this discussion to the “case study” area, the complexity of dividing ritualized and non-ritualized space becomes clear. The north side of the Hörsne and Gothem rivers holds all visual remains, such as cairns and ship settings; remains often associated with the sacred world. Adding the geological conditions, the south and “ship setting free” side of the river consists mostly of rocky limestone ground. In contrast, the north side consists of moraine marl suitable for agriculture. On the north side there are indications of settlements actually having been found. The northern side of the former inland lake also slopes towards the sun which places the southern infertile side of the river in the shade. Thus, the north side of the river held both graves and fertile soils and was therefore most probably the place of everyday life. How then do we interpret the south side which actually holds one important feature: The Gothemshammar wall? Might the south side be interpreted as the area of the foreign/unfamiliar/dread?

If we instead consider the earlier mentioned relationship between rock-art and ship settings on Gotland emphasized by Hansson (1927:86), interesting ideas can be raised. The term “landmark” is prominent in Nordenborg Myhre’s discussion, and is used as a reference while navigating the landscape along with monuments and seamarks, including mobile features such as the sun (2004:32pp). Nordenborg Myhre categorizes certain rock-art sites as such landmarks, which Ling develops further by demonstrating that rock-art panels are located in close connection to the shoreline, lakes, and waterways. Moreover Ling demonstrates that the Bronze Age grave monuments are the prehistoric remains with the closest spatial relation to the rock-art (2008:154).

If we consider the Gotlandic ship settings not only as graves but also as landmarks in the landscape, it is possible to see them in alternate ways and understand why there is such a large variety of ship settings. The differences among the Scandinavian Bronze Age stone ships have been discussed by Rausing (1984) and Capelle (1995) and include the distinguished smaller boats used for travel over short distances and larger “warships” which were suited for long voyages. These differences are clearly visible in the Gotlandic material where the smaller ship settings measure a few metres and the more prominent ones reach 45 metres in length. The largest ship setting existing today is lo-
icated at Ansarve, Tofta parish c. 20 kilometres south of Visby (RAÄ No. Tofta 14:1) and it has almost exactly the same proportions as the *Uppgarde Ship*. If the smaller boats were used for short journeys along the coast (or inland), the larger vessels might have been used for travel to the mainland. With that in mind, the significance of the *Uppgarde Ship* and its surroundings, for example the long line of hearths found in its close proximity, become interesting. In a recent study we (Bradley, Skoglund and Wehlin 2010) have raised the idea of making a possible comparison between the largest ship settings on Gotland and the mainland cult houses (which not have been found on the Island). Both features occupy similar positions close to the water’s edge and both form an open enclosure (Victor 2002). Furthermore, it appears that the cult houses played a specialised role in ceremonial matters, which may also be indicated in the Gotlandic ship by the above mentioned hearths and features in close connection to the commemoration of the dead. As mentioned, several of the smaller ship settings are associated with cremation burials.

By adding a maritime perspective and considering the *Uppgarde Ship* area a meeting place it could be interpreted as an arena for a large variety of rituals. Rituals may have for example been carried out in association with arrivals and departures of visitors/or voyagers before and after an overseas journey. The ship settings may therefore be structures representing different “rites of passage” related to two very different journeys, actually leaving or arriving from a dangerous overseas journey or leaving for the “other side” and “arrival” at birth. The latter may have required certain rituals to connect the new born with a certain piece of land by burying the navel cord/placenta at the ship setting (e.g. Handy 1927:214-215). This may explain the “empty” ship settings mentioned above. One should also consider the fact that seafaring can be dangerous and the arrival or rather the “non-arriving” after an overseas journey may therefore have been associated with death. Many are the “empty” monuments of seafarers lost at sea in historical and modern times.

**Conclusion**

By taking a maritime perspective when studying a local site such as the Gothem River and the Lina bog area, new questions can be raised considering possible maritime institutions in the Baltic Sea area during the Bronze Age. With such a perspective the large variety of ship settings could be discussed in broader terms than merely chronology and change over time. It is tempting to relate the appearance of ship settings, a new phenomenon in the landscape, with the increasing amount of bronze artefacts at the time. Erik Nylén’s (1959) suggestion of “two cultures” may be to draw far-reaching conclusions, but a supposed maritime phalanx in the Bronze Age society could still be discussed. People enrolled in a maritime institution; boat builders (recently acknowledged by Mary Helms (2009) as “The master(y) of hard materials”), seafarers, people with knowledge and skills required for overseas journeys, such as navigation etc., might have had a special place in the society. If so, they may be connected to the ship setting tradi-
tion and the feature could be seen as a primary instrument for collective identification, as in the rock-carving sites in Bohuslän. The burials become a secondary action in connection with assembly places and a social arena for large numbers of rituals. Artelius (1999) stresses the idea that different types of graves may indicate ideological identity in the social structure and thereby mark regional identity. Furthermore, he argues that the creation of the ideological landscape contributed to the maintenance of the social structure.

I propose that the landscape/seascape in the “case study” area, with the exceptional features of the *Uppgarde Ship* and the *Gothemshammar Stone Wall*, could be interpreted in new ways. The fenced off peninsula of Gothemshammar could indicate a possible transition-zone for local and foreign meetings of a more interregional kind. If the visitors, or some of them, later entranced the local world by moving along the supposed inland-route another regional meeting place can be distinguished at *Uppgarde*. Here, other rituals and ceremonies were performed and a meeting of the local traditions was more significant. It seems reasonable to suggest that lines or paths, how to move, articulate, and orientate in the landscape/seascape were important factors. The *Gothemshammar Stone Wall*, the line of hearths at *Uppgarde* and the Hörsne and Gothem rivers are all examples of clear boundaries visible in the landscape. A suggestion for further studies on the matters discussed in this paper is the use of ethnological/ethnographical and historical accounts considering maritime life, which could possibly give indications of such actions and rituals useful to the discussion of the Bronze Age period in the Baltic Sea.

Finally, and relevant to the discussion of a maritime perspective, it is interesting that tradition claims that the grave of Tjelvar, the man who according to legend discovered and first brought fire to Gotland, is located on a cape just north of the “case study” area discussed in this paper!

**ACKNOWLEDGMENTS**

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Late Neolithic burial practice on the Island of Öland, southeast Sweden

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Abstract - This paper deals with Late Neolithic burials found on the Swedish Island of Öland in the Baltic Sea. A brief review of the hitherto known burials from this period on the Island is followed by the presentation of a recent find at Björnhovda, southwest Öland. Here at least one, and possibly as many as five, Late Neolithic traces of burials were found and excavated during autumn 2008. The site is presented in some detail, and these burials are compared to evidences presented in the brief review of Late Neolithic burial practices on Öland. In conclusion it is shown that burial customs during the Late Neolithic were greatly varied in this area, although a number of features can be identified which appear in the majority of the burials and thus possibly indicate some form of common customs.

Introduction

The Island of Öland is the second largest of the Swedish islands in the Baltic (Figure 1). The bedrock consists mainly of Ordovician limestone, the topography is level and the highest point is around 58 m above present sea level. The Island is extremely rich in terms of prehistoric archaeological remains, consisting of visible monuments and sites as well as stray finds of prehistoric artefacts from all periods. The research to date has mainly concerned settlements and burials from the Iron Age, and until recently the Island’s Stone Age was sparsely known. A large-scale field survey, conducted in the mid 1990s, resulted in a vast increase of recorded Stone Age sites, and today a wealth of sites are known along the coasts of the Island. Few of the sites have been excavated and thus our knowledge of this period is still limited. However, in recent years, research interest in Stone Age remains has increased, as has the number of excavated Stone Age sites. During the last three years, contract archaeology in the region has carried out several small-scale excavations on Neolithic sites of various types (Papmehl-Dufay 2008a, 2008b, 2008c, 2009a, 2009b; Alexandersson & Papmehl-Dufay 2009). In addition, several studies analysing prehistoric skeletal remains have been carried out in which aDNA and stable isotopes have played a key role (Kanstrup 2004, Eriksson et al 2008, Linderholm 2008). This has increased our knowledge of the earliest settlers on the Island, but it is evident that more research is needed. This paper deals with one of the Stone Age sites, a Late Neolithic (LN) grave field at Björnhovda, excavated in August and November 2008 (Papmehl-Dufay 2009a).
Öland in the Late Neolithic

The LN on Öland has never been subject to a thorough analysis, although a few studies exist. Nils Åberg’s study of the prehistory of Kalmar County from early 20th century (1913, 1923) includes stray finds from all phases of the Stone Age. Based on the distribution and typology of various Stone Age implements, his aim was to describe and understand the development of settlement and demography in the area. From the distribution maps showing finds of simple shafthole axes and flint daggers (Åberg 1923 plate V), it seems the central parts of Öland, from the parishes of Torslunda and Gårdby in the south to Köping in the north, have constituted a central area of settlement during the LN.

Åberg’s maps were based solely on reported stray finds and those from large private collections, and thus several source critical factors need to be considered in the evaluation of the artefact distributions. Still, subsequent studies have more or less confirmed the existence of the above mentioned core area, with the extension towards the south to...
include the parishes of Vickleby and Resmo (Gurstad-Nilsson 2001a). Concerning the northern parts of the Island, one must bear in mind that large parts were still submerged during the Neolithic (Svensson 2001). An analysis of the digitalised data found in the National Record of Ancient Sites and Monuments (FMIS) reveals a similar pattern as above concerning LN sites.

In a study of diet on Öland during the LN, Marie Kanstrup carried out stable isotope analyses ($^{13}$C, $^{15}$N) on human skeletal remains from a number of burial contexts (Kanstrup 2004). Bones from the burial sites at Algutsrum, Kalleguta, Karlevi, Strandtorp, Torsborg, Tryggestad and Vickleby were included in the study, and these sites are presented in some detail below. The aim of the study was to investigate the dietary habits of the LN population on the Island to discuss diet and food as expressions of cultural identity. The results indicated, among other things, that despite the insular geographic setting, the subsistence during the LN was based mainly on terrestrial resources, with a limited influx of marine protein. This was interpreted as a reliance on agricultural products and domesticated animals in combination with limited fishing and hunting. Subsequent studies on Neolithic diet on Öland by Eriksson et al (2008) have also included Middle Neolithic individuals from burials in Funnel Beaker (TRB) and Pitted Ware (PWC) contexts respectively. The results presented by Eriksson et al indicate that the predominance of terrestrial resources in the diet, as suggested by Kanstrup’s study, in fact is a novelty of the LN. Analysed human skeletal remains associated with the Funnel Beaker culture (TRB) show a mixture of marine and terrestrial resources, and the individuals from the Pitted Ware culture (PWC) display values that give testimony to a completely marine-oriented diet and lifestyle (see also Papmehl-Dufay 2006). Thus, these studies suggest that the shift to a Neolithic economy occurred on Öland at the onset of the LN phase.

Late Neolithic burials on Öland

The classical LN grave form in southern Sweden is the gallery grave or “stone cist”, a specific type of megalithic tomb that appears in large numbers from Scania in the south to Medelpad in the north and date to the LN and Early Bronze Age (EBA) (e.g. Weiler 1994; Holm et al 1997; Heimann 2004; Forsman 2007). The stone cists are usually situated in a stone setting, and they are generally considered as collective burials with depositions in the chamber of large amounts of human and faunal skeletal remains as well as objects of LN character. Typical stone cist artefacts include flint daggers, flint sickles, bifacial flint arrowheads, slate pendants, shaft-hole axes and bone implements (Stensköld 2004). The stone cists have played an important role in the archaeological understanding of the chronology and social development of the LN in southern Sweden. They are not the only type of LN burials occurring in the area, however, and in recent years it has become increasingly apparent that burial customs in southern and central Sweden during this period varied greatly (Forsman 2007: 395pp). Alongside collective burials in stone cists, cremations as well as individual earth graves have been widely practiced. Espe-
cially in southernmost Sweden, the latter form appears to have been more common than previously thought (Stensköld 2004: 137; Forsman 2007: 396). Regional customs seem to vary greatly, and outside Scania the individual earth graves thus far are few.

The varied nature of LN burial practice is equally apparent when considering the known data from the Island of Öland. A problematic factor is that burials in stone cists were very common on the Island during the Iron Age, and thus detection of LN stone cists among the hundreds of Iron Age cists is not an easy task. The compilation presented in table 1, and in the text below on LN stone cist burials on Öland, has been collected from published and archive data, and in some cases data from FMIS (the National Record of Ancient Sites and Monuments) has been used. Additional burials from the LN may be “hidden” among the hundreds of excavated Iron Age burials from the Island, and my study presented below should be seen as an initial review of the known data. For further details with illustrations see the excavation report from the Björnhovda site (Papmehl-Dufay 2009a). The sites mentioned in the text are indicated in figure 1.

The Sites

The **Torsborg** site was discovered and excavated in the 1950s (Petersson 1956). The site was heavily damaged by gravel quarrying, and the eight recorded burials have probably originally been accompanied by additional graves. Seven are interpreted as stone cists burials, and one is described as an inhumation in crouched position covered by limestone slabs. Unfortunately this grave lacks finds, and its date remains unclear. The number of buried individuals at this site has not been clearly established, but it is indicated that several of the graves contain the skeletal remains of a number of individuals spanning over an extended chronological sequence. The majority of the graves at Torsborg indicate dates to the late Middle and LN, although the site has been used for burials throughout the Bronze Age and even during the Iron Age. Of the 16 dates available from Torsborg, only four show dates from the LN time frame (Eriksson et al. 2008: table 5). However, the majority of the finds from the graves are typical of the LN and include cylindrical amber beads, tooth pendants, a slate pendant, a bone pin and two bone points. The Middle Neolithic burials at Torsborg are of particular scientific interest, since they connect with the Battle Axe culture both in chronology and artefacts. Bones from this site have been included in studies of LN diet (Kanstrup 2004; Eriksson et al. 2008).

The **Kalleguta** grave was found and excavated in 1975 (Schulze 1980). The initial aim was to excavate an Iron Age stone setting, but the Iron Age cremation layer was found to be superimposed on a damaged LN stone cist containing two individuals. The artefacts found in the stone cist include flint flakes, fragments of resin, bone pins, bone beads and fragments of pottery. Bones from this site have also been included in studies on LN diet (Kanstrup 2004; Eriksson et al 2008), and in connection to these studies one of the buried individuals has been $^{14}$C-dated to the LN c. 2200-1800 BC.
The burial at Tryggestad is poorly documented, as it was excavated already in 1894 by Hans Hildebrand. The grave was described as a stone cist of a “man’s length”, with no visible marking above ground. Two human skeletal remains were found, and except for the lower jaw bones, all bones found were reburied at the local church yard. The finds in the stone cist included a flint scraper, flint flakes and a number of oyster shells one of which showed traces of working. An attempt was made to include the jaw bones from the Tryggestad burial in the above mentioned studies on LN diet, but the bones turned out to be in a poor state of preservation and thus unfit for the analysis and no $^{14}$C-date is available from this site.

The burial at Strandtorp is situated at a site containing a large number of stone cists, most of which probably date to the Iron Age. The burial in question was excavated in the 1930s and consisted of a stone cist with finds of human skeletal remains and artefacts of LN type. The finds include a bone pendant, a bone pin and fragments of a decorated pottery vessel. Bones from the burial at Strandtorp were included in the above mentioned studies on LN diet, and the results indicated a reliance on agricultural products (Kanstrup 2004). No $^{14}$C-date was carried out on this burial, however.

In 1973 a stone cist was discovered at Vickleby on southwest Öland (Holgersson 1976). The grave contained the skeletal remains of three individuals, and the accompanying artefacts suggested a date to the LN. The finds include two bone pins, two bone points, a flint scraper, flint flakes, fragments of a decorated pottery vessel and fragments of burned clay, which originated from a wattle and daub structure. The typological dating was partly supported by a conventional $^{14}$C-date, which placed the burial at 2100-1300 BC. Recently all three individuals were AMS-dated, and the results suggest a slightly earlier time frame at c. 2300-1700 BC (Kanstrup 2004; Eriksson et al 2008). Given the individual ranges of these dates, if the three individuals were buried on the same occasion, this would have taken place in the final phase of the LN around 1900-1800 BC.

The burial at Karlevi was found in 1926 during an excavation of a severely damaged grave mound. The mound contained finds from the Bronze Age and the Iron Age, but was superimposed on Neolithic inhumations without a stone cist containing the skeletal remains of three individuals as well as a large artefact assemblage. The finds included a flint dagger, two flint spearheads, flint flakes, a disc-shaped amber bead, a perforated fossil, a bone pin, cylindrical bone beads, tooth pendants and a perforated cylindrical bone button. One of the flint spearheads was fragmented, and parts of it were mixed in the Iron Age burial context as well as in the LN burial context. An attempt was made to $^{14}$C-date bones from the original burial, but the result turned out to be Viking Age, which further points to the level of disturbance and problems with inconsistencies in the documentation of the collected material (Kanstrup 2004).

At Algutsrum on western Öland, a site consisting of some 30 burials was excavated and removed in the 1970s (Hagberg & Waern 1974; Rasch 1991). Under one of the large
stone settings, a stone cist was found containing artefacts of LN type. The finds include a bifacial flint arrowhead, flint flakes and tooth pendants. Skeletal remains of at least 16 individuals were found in the stone cist, six of which have recently been subjected to 14C-dating. The results indicate a range for use of the stone cist from the latest phase of the LN (two dates) through the early and middle Bronze Age, c. 1900-1000 BC (Kanstrup 2004; Eriksson et al 2008).

A site consisting of around 70 prehistoric burials was excavated in the 1950s and 1960s at Törnbotten, western Öland (Rasch 1991:169pp). The majority of the burials dated to the Iron Age, but one of the stone settings covered an earlier feature. Here, a stone paved pit c. 3 x 2 m was found containing a layer of partially burned human skeletal remains from several individuals and underneath them, an inhumation in outstretched position with the head missing. From the filling of the pit, a large artefact assemblage was recovered, indicating a LN or EBA context. The finds from the pit included flint flakes, a flint blade, bone pins, cylindrical bone buttons, a bone plate, two bifacial flint spearheads, a shaft-hole stone axe, a cylindrical bone bead, a fragment of worked antler and two copper/bronze spirals. No 14C-dates have been carried out from this site.

At Lilla Smedby on southwest Öland, a large Iron Age cemetery has been subjected to archaeological excavations on several occasions (Schulze 2001). A large portion of the graves consists of stone cists, and the majority of the c 130 investigated graves show a mid-Iron Age context. One stone cist however, contained the human skeletal remains of one adult and a child and grave goods of LN type. The finds include a flint flake, three tooth pendants and two bone pins. No 14C-dates are available from this burial.

Gettlinge on southwest Öland hosts one of the largest Iron Age graveyards on the Island, stretching over some 2.5 km and containing a variety of grave forms. Numerous excavations have been carried out here since the late 19th century. A majority of the investigated graves consist of inhumations in stone cists, of which the majority date to the Roman Iron Age. One of the excavated features was a mound containing two stone cists, one dating to the early Roman Iron Age and the other having a LN or Bronze Age context with finds including a tooth pendant and a flint flake (Näsman 2001: 264pp, 283). However, no 14C-dates have been carried out here.

In the parish of Resmo on southwest Öland, four megalithic tombs are situated, one of which was excavated in 1908 (Arne 1909). An abundance of human skeletal remains from a large number of individuals was recovered from the chamber, as well as a rich artefact assemblage indicating a chronological range spanning the Neolithic and into the Bronze Age period. Among the artefacts, finds of a fragmented flint dagger, two bifacial flint arrowheads, a bone pin, two perforated cylindrical bone buttons and a number of bone points indicate a LN or EBA context. Several of these artefacts show great similarities with objects from some of the above mentioned LN burials on the Island. Recently some 34 14C-dates on human bones found in the chamber have been carried out, and the
results confirm a long term utility of the monument. Twelve of the dates show a late Early/early Middle Neolithic TRB context, another eleven indicate a late Middle Neolithic context, and an additional ten show an early to mid-Bronze Age context. One single human bone has been dated to the LN period, and in addition a bone from a sheep or a goat (Ovis/Capra) has been dated to this period as well. Several of the recovered artefacts confirm that the tomb was in use also during the LN (Gurstad-Nilsson 2001b:214; Papmehl-Dufay 2009a).

During a site evaluation at Karlevi 7:4 in 2009, a cremation pit was discovered and investigated (Alexandersson & Petersson manuscript). Apart from a small amount of cremated human and animal bones, the finds from the pit include pottery, burned clay, a fragment of worked bone, a flint flake and one bear tooth pendant. Four of the potsherds are decorated, and on stylistic grounds they indicate dates from various parts of the Middle Neolithic. At least two sherds can be attributed to the late Middle Neolithic Battle Axe culture. The tooth pendant and a cremated human skull fragment from the feature have recently been $^{14}$C-dated, and the results suggest that a certain time span is involved in the deposition of the material. The human bone was dated to the period MN B c. 2600-2100 BC, which corresponds well with the finding of the Battle Axe pottery. The tooth pendant on the other hand, was dated to the LN around 2100-1900 BC. A slight chronological overlap is indicated when calibrated by 2σ, but it seems difficult to argue that the two are contemporary, and rather a chronological sequence is suggested. However, if the dated individual relied on a marine diet, the reservoir effect would affect the outcome of the date and suggests the bear tooth and the cremation to be contemporary. Since the $^{14}$C-analysis in this case was carried out on hydroxyapatite from cremated bones and not on collagen, no data is available on $^{13}$C and the marine influx in the diet of the cremated individual. However, the presence of the Battle Axe pottery, which most probably dates to the late Middle Neolithic, could suggest that the buried individual is contemporary with the pottery, and that the bear tooth pendant is a later deposition in the grave. With this reservation, it is suggested that the cremation at Karlevi 7:4 be dated to the late Middle Neolithic or possibly the LN, but the tooth pendant clearly indicates that activities related to burials were practiced at the site during the LN. The Karlevi 7:4 site is not yet published, and information regarding its existence has kindly been offered by Per Lekberg and colleagues at Kalmar County Museum.

An emerging pattern?

What results can be drawn from the brief review presented above of LN burial sites on Öland? Are there any general spatial or structural patterns of similarities and differences to be identified? Firstly, there are several problematic issues connected to the data set that must be considered. Only a few of the burials are securely dated, and in almost all cases the connection between $^{14}$C-dates and dating using typology of artefacts is difficult to evaluate. All $^{14}$C-dates are all carried out on bone material and almost 50% of the
burials clearly contain material deposited over a long time span, often several centuries and in some cases millennia, and thus to identify the use of the site in the LN is difficult.

All of the reviewed graves seem to be single occurring features, with the possible exception of the Torsborg stone cist grave field. In several cases a grave field has subsequently evolved around what appears to be an initial burial from the LN, but so far there is no clear evidence for a true LN grave field on the Island, with the possible exception of the Torsborg site. Concerning grave forms, of the twelve sites reviewed, eight contain stone cist burials suggested to be in a LN context. The remaining four include one passage tomb, two earth burials covered by subsequent grave structures and one cremation burial under level ground. This is in line with the general variation in LN burial customs mentioned above. Stone cists are the most commonly observed LN grave form on the Island, but they are also the easiest to find and identify. Inhumations and cremations, which are dug down without any visible structures on the surface (at least not visible today) are found more by chance, and thus it is difficult at present to draw any far reaching conclusions concerning the relative abundance of the various burial customs during the LN on Öland.

In the cases where osteological data is available, the stone cists generally seem to contain the skeletal remains of 1-3 individuals. The exception is the site Algutsrum where the stone cist contained the remains of 16 individuals; however, a large portion of them probably date from subsequent periods, and of the six dates available only two indicate a LN context. Thus, stone cists during the LN on Öland seem to have been used for burials of one, two or in some cases three individuals. A similar pattern is suggested for the other types of burials. The rather peculiar burial at Törnbotten contained an unknown number of individuals, although the occurrence of a single inhumation at the bottom of the feature, and a layer of partially burned human bones above it, may suggest that LN use also in this case involved only one or a few buried individuals. This is perhaps also supported by the artefact assemblage from the feature, including two copper/bronze spirals.

Among the artefact assemblages from the burials, no detailed analysis can be presented at this time, but some observations are worth mentioning. Flint is present in some form in ten of the twelve reviewed graves. Daggers, spearheads and/or arrowheads are present in four of the graves. Flint sickles are completely absent from the burials so far. Thus, daggers and other bifacial flint tools do not seem to have been standard burial gifts, despite the fact that they are common as stray finds on the Island (Åberg 1923; Gurstad-Nilsson 2001b). Another observation of importance in the present context (see below) is that only one of the graves contained a stone axe. Artefacts made from bone, teeth or shells are however present in all burials. Considering the limestone bedrock and the calcareous soil on the Island this might not be surprising, but there are some traits in the assemblages that call for a comment. The most striking pattern is that bone pins of similar size and fashion were found in as many as eight of the twelve graves (Figure 2). The
LN date of these pins is supported by the burials at Kalleguta and Vickleby. They contain a pin each, both lack evidence for use in later periods, and both are dated to the LN through \(^{14}\)C-analysis of human bones. Tooth pendants and perforated cylindrical bone buttons are also common, the former occurring in six and the latter in three of the graves. Here the date is somewhat more difficult to establish, however, and it cannot be ruled out that the bone buttons date to the Bronze Age. Tooth pendants occur in graves from all parts of the Stone Age on the Island (e.g. Papmehl-Dufay 2006).

With the background of LN burial customs on Öland generated by the above review, I now turn to the site Björnhovda which was found and excavated in 2008. The results from these excavations fit well into the discussion on burial practice during the LN on the Island as well as the issues of variability and visibility. The information presented below is a summary from the excavation report, which was originally published in Swedish (Papmehl-Dufay 2009a).

**The Björnhovda site**

The village of Björnhovda is situated in the eastern part of the small town of Färjestaden, on western Öland, southeast Sweden (see fig 1 above). From its establishment in the middle Iron Age and up to the 15\(^{th}\) century, the village was located c. 1 km to the east on the crest of the so-called West escarpment, which is the highest elevated topographic feature in the otherwise level Öland landscape (Göransson 1968). At the site of the Iron Age
village of Björnhovda, several high-quality prestige artefacts have been found such as a hoard of Roman gold coins and four bronze figure-plates. It has also been suggested that this is the original find spot of the famous gold collar of Torslunda, but this is not certain since there is no record of where it was actually found (Söderström & Papmehl-Dufay 2009). In the area around the present day village of Björnhovda, a number of Stone Age artefacts have been found, which indicate that several settlement sites from the Neolithic in particular are located in the region.

Due to the planned construction of a number of new houses, an area of c. 26,500 m² situated just west of the village of Björnhovda, was subjected to an archaeological site evaluation in August 2008. The aim was to delimit and evaluate the remains of two settlement sites, previously indicated by finds of worked flint in the plough layer at this site. Both settlements turned out to be severely damaged, but in a depression in-between the two sites an additional and unusual feature was found, which lead to further archaeological excavation of the site in November and early December 2008.

**Burial 1**

Just beneath the plough layer in the central lowermost part of the investigation area, two stone axe heads were found lying closely together (Figure 3). The position of the axes, one shaft-hole axe of LN type and one finely polished thick butted stone axe, clearly indicated an intentional deposition of some sort. At first no sunken feature was discernible in connection with the axes, but careful excavation in the area revealed a dark coloration, measuring c. 1.75 x 1.1 m, in which the axes were placed in the north-eastern end (Figure 4). The fill continued from the level of the axes and down c. 0.17 m and consisted of clayey silt rich in small fragments of charcoal. In the central part of the feature a small flake of porphyry was found, but apart from this no further artefacts were recovered from the feature and no bones were found. Despite this, the placement of the axes and the flake in connection to the dark soil led us to the interpretation that the find might represent a LN burial. In an attempt to further investigate this, phosphate samples were analysed representing a 15 cm grid covering the entire feature.

Unfortunately no distinctive patterns in soil phosphate content appeared that could be related to the function of the feature.

The shaft-hole axe is severely weathered, and from the presence of small fragments and pulverised traces of weathered rock around the axe it is clear that the weathering has taken place on site. It is known from other studies that axes found as grave goods in Neolithic burials often are heavily weathered, and usually this is explained by the effect on the rock of mortuary liquids from the dead body (von Hackwitz & Lindström 2004:22-21; Lekberg 2002:118pp). The other axe in the Björnhovda grave does not show evidence of weathering, however, despite its place only a few centimetres from the weathered shaft-hole axe. The rock types have not been analysed, but from the colour
and texture it is clear that the axes are made from different types of stone material and possibly their chemical and physical composition accounts for the apparent differences in resistance to weathering.

Figure 3. Two axes indicating a burial, Björnhovda in August 2008. Photo from the east by the author/Kalmar County Museum.

Figure 4. Burial 1 at Björnhovda as it appeared c 3 cm below the level of the axes. The two yellow sticks in the left part of the image mark the position of the axes. Photo from the north-west by the author/Kalmar County Museum.
The weathered shaft-hole axe measures 14.5 cm in its present state, and is fragmented from the drilled shaft-hole and towards the butt. The diameter of the drilled hole is 2.5 cm, and the original length of the axe is estimated to around 18-19 cm. This makes it a relatively long axe compared to finds of shaft-hole axes found in other graves, and it is also unusual to find fragmented axes in burial contexts (Lekberg 2002:129pp). It should be emphasised, however, that due to the weathering of the axe on site it is not possible in this case to establish whether the axe was deposited in a complete or a fragmented state. An argument for the former is that the “fragment” is large enough to allow for a new shaft-hole to be drilled, and the fact that this has not been attempted may suggest that the axe was complete at the time of deposition (see Lekberg 2002).

The thick-butted stone axe is well preserved and finely polished on all four sides. It measures 7.8 cm in length, 4 cm in width and 2.3 cm in thickness. The type of stone is fine grained of a greyish-blue colour. A similar axe was found in a layer of fire-cracked stone from the EBA, at Brutorp south of Kalmar, SE Sweden (Dutra Leivas et al 2001:31).

The combination of axes suggests a date of the suggested burial to an early phase of the LN, around 2300 BC or shortly thereafter (Per Lekberg personal comment). The find is of importance to our understanding of the LN in the area, and the archaeological context of the suggested burial was regarded important to validate further. During the initial excavation in August, no clear indications of further burials were found in the area and there were practically no other features whatsoever that with any certainty could be dated to the Neolithic. Approximately 25 m north of the burial, a fragment from a flint scraper, which may be dated to the Neolithic, possibly indicated the presence of further burials in the low-lying central part of the investigation area.

**Burials (?) 2-5**

In an attempt to establish the context of the suggested burial, an additional excavation was carried out during the late autumn. An area of c. 3100 m² surrounding the burial was stripped of soil and carefully investigated. Despite difficult weather conditions, the excavation was successful as another four features were found that could be interpreted as remains from burials (Figure 5).

The grave-like features consist of elongated dark colorations in the clayey soil (Figure 6), in several cases containing a few pebble stones and fragments of charcoal, similar to the above mentioned feature, which was interpreted as the remains of grave. These additional features measured c. 1.7-3.2 x 0.7-1.1 m and they varied in depth from c. 0.15 to 0.36 m. Three of them were located c. 16-24 m south of the above mentioned burial-feature and the fourth was located c. 9 m to the northeast. All five features thus cluster in an area of c. 25 x 15 m in the central part of the investigation area, in a field situated between the two previously recorded, but heavily damaged, settlement sites. In direct
association with one of the features a posthole was found that could be interpreted as remains of a marking above ground.

Figure 5. The central part of the investigation area, with burial 1 and the possible burials 2-5 indicated.
Apart from this no indications of grave superstructures were identified. No further artefacts were found that can be securely interpreted as grave goods, although one of the features contained a large flake of porphyry, which might be interpreted as such.

It should be recalled that the axes in burial 1 were found right beneath the ploughed soil. In order to uncover and identify the faint colorations of the features during the soil stripping in November, we dug a bit deeper with the machine than was the case in August. Thus, it might well be the case that artefacts representing grave goods have been destroyed or displaced either by earlier agricultural activities or by the machine during the soil stripping. Still, the similarities in size and fill of the above mentioned features, the position relative to one another, and the presence of the suggested burial 1 are suggestive of favoring the idea that a cemetery consisting of at least 5 burials, one of which dates to an early phase of the LN, has been identified at this site.

Figure 6. One of the grave-like features at Björnhovda discovered in late autumn 2008. Photo from the northeast by the author/Kalmar County Museum.
Conclusion

The theme of this paper, LN burials on the Island of Öland, has not previously been discussed in any detail in the archaeological literature. The brief review presented above shows that several burials from the period have been identified, and also that a number of common traits and features can be identified from the current data set. Source critical factors must be considered, but with these in mind I argue that a general view be presented on some of the features of LN burial practice on the Island. It seems that the stone cists during this period did not function as communal graves in the way often seen on the mainland. Instead, the majority of them contain evidence for 1-3 individuals buried in the same grave. Also, it is clear that stone cists were not the only burial form practiced during the LN phase. Inhumations without any (as far as we know) visible markers on the surface mentioned in the review were all covered by later grave structures. It should be emphasised though that this most likely is not a defining feature of these types of burials, rather it is the reason why these particular burials were found in the first place. If anything, the suggested cemetery at Björnhovda shows that inhumations can be extremely difficult to identify if they are not tied to a stone cist context, and they are probably much more common than previously thought. This in turn means that the distribution among various LN grave types, as suggested in the review above, is most probably heavily biased towards graves with some form of visible stone structure, be it a stone cist or an overlapping Iron Age stone setting.

The classical stone cist grave goods of flint daggers and sickles are not the most commonly occurring artefacts in the reviewed Öland graves. Flint sickles are completely absent in the graves and rare in the Öland surface find collection as a whole, while daggers and spearheads have been found in large numbers spread over the Island (Figure 7). Some of these finds, as well as some of the shaft-hole axes, most probably represent LN burials that have been disturbed by agricultural or other activities. This is further suggested by the axes in burial 1 at Björnhovda, which were found right at the transition between the plough layer and the subsoil. A few more seasons of agricultural activities at the site could easily have displaced the axes, turning them from what has been interpreted as unique grave goods to anonymous surface finds.

The above review and finds at the Björnhovda site have contributed to our knowledge of burial practice on Öland in the LN and a number of new aspects can be included in the analysis. An important factor is the landscape context: the Björnhovda burials was located in a low lying field between two settlement areas in a topographic location far from what usually is regarded as the ideal site for burials. Usually we favour searching for Neolithic burials on an elevated ridge visible in the landscape. This means that if we continue to search for these types of burials only in the “ideal” locations, we run the risk of loosing vital information.
Figure 7. Map of Kalmar County, with the distribution, according to Nils Åberg, of flint daggers and bifacial spearheads (red dots) and shafthole rock axes (black dots) respectively. After Åberg 1923 plate V.
<table>
<thead>
<tr>
<th>Site</th>
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<th>No of graves</th>
<th>No of buried individuals</th>
<th>Artefacts</th>
<th>Typological date</th>
<th>Absolute date (14C)</th>
<th>Reference</th>
</tr>
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<td>8</td>
<td>numerous</td>
<td>Flint flakes, flint blade, flint scraper, pottery, cylindrical amber bead, tooth pendants, slate pendant, bone pin, bone</td>
<td>Middle Neolithic B to early Iron Age</td>
<td>-</td>
<td>Petersson 1966; Kansstrup 2004; Eriksson et al</td>
</tr>
<tr>
<td>Kallegut</td>
<td>Stone cist covered by later stone setting</td>
<td>1</td>
<td>2</td>
<td>Flint flakes, fragments of resin, worked antler, bone pins, bone beads, bone point, pottery</td>
<td>Late Neolithic</td>
<td>2200-1800 BC (1 date)</td>
<td>Schuule 1985; Kansstrup 2004; Eriksson et al</td>
</tr>
<tr>
<td>Tryggestad</td>
<td>Stone cist</td>
<td>1</td>
<td>2</td>
<td>Flint scraper, flint flakes, worked oyster shell</td>
<td>Late Neolithic</td>
<td>-</td>
<td>SHM 9576; Arne 1909; Kansstrup 2004</td>
</tr>
<tr>
<td>Strandtorp</td>
<td>Stone cist</td>
<td>1</td>
<td>unknown</td>
<td>Bone pendant, bone pin, pottery</td>
<td>Late Neolithic</td>
<td>-</td>
<td>Kansstrup 2004; Papmehl-Dufay</td>
</tr>
<tr>
<td>Vickleby</td>
<td>Stone cist</td>
<td>1</td>
<td>3</td>
<td>Bone pins, bone points, flint scraper, flint flakes, pottery, clay daub</td>
<td>Late Neolithic</td>
<td>2300-1700 BC (total of 3 dates)</td>
<td>Holgersson 1974; Kansstrup 2004; Eriksson et al</td>
</tr>
<tr>
<td>Karlevi</td>
<td>Flat earth inhumation covered by later mound</td>
<td>1</td>
<td>3</td>
<td>Flint dagger, flint spearheads, flint flakes, disc-shaped amber bead, perforated fossil, bone pin, cylindrical bone beads, tooth pendants, perforated cylindrical bone button</td>
<td>Late Neolithic</td>
<td>-</td>
<td>SHM 18914; Kansstrup 2004; Papmehl-Dufay 2009a</td>
</tr>
<tr>
<td>Algutsrum</td>
<td>Stone cist covered by later stone setting</td>
<td>1</td>
<td>16</td>
<td>Bifacial flint arrowhead, flint flakes, tooth pendants</td>
<td>Late Neolithic</td>
<td>1900-1000 BC (total of 6 dates)</td>
<td>Hagberg &amp; Waern 1974; Rasch 1991; Kansstrup 2004; Eriksson et al</td>
</tr>
<tr>
<td>Törnbotten</td>
<td>Flat earth burial covered by a later stone setting</td>
<td>1</td>
<td>several</td>
<td>Flint flakes, flint blade, bone pins, perforated cylindrical bone buttons, bone plate, bifacial flint spearheads, shafthole axe, cylindrical bone bead, worked antler.</td>
<td>Late Neolithic early Bronze Age</td>
<td>-</td>
<td>Rasch 1991; Papmehl-Dufay 2009a</td>
</tr>
<tr>
<td>Lilla Smedby</td>
<td>Stone cist</td>
<td>1</td>
<td>2</td>
<td>Flint flake, tooth pendants, bone pins</td>
<td>Late Neolithic</td>
<td>-</td>
<td>Schulze 2001; Papmehl-Dufay</td>
</tr>
<tr>
<td>Gettlinge</td>
<td>Stone cist</td>
<td>1</td>
<td>1</td>
<td>Flint flake, tooth pendant</td>
<td>Late Neolithic</td>
<td>-</td>
<td>Nitsman 2001; Papmehl-Dufay</td>
</tr>
<tr>
<td>Mysinge</td>
<td>Passage tomb</td>
<td>1</td>
<td>55</td>
<td>Fragment of flint dagger, bifacial flint arrowheads, bone pin, perforated cylindrical bone buttons, bone points</td>
<td>Early Neolithic to late Neolithic</td>
<td>c 3500-1000 BC (total of 34 dates)</td>
<td>Arne 1909; Eriksson et al 2008; Papmehl-Dufay 2009a</td>
</tr>
<tr>
<td>Karlevi 7.4</td>
<td>Cremation</td>
<td>1</td>
<td>unknown</td>
<td>Pottery, flint flake, worked bone, tooth pendant, hazelnut shell</td>
<td>Middle Neolithic</td>
<td>2600-1900 BC (total of 2 dates)</td>
<td>Alexandersson &amp; Petersson</td>
</tr>
</tbody>
</table>

Table 1. Compilation of Late Neolithic burials on Öland. Modified after Papmehl-Dufay 2009a.
The axes in burial 1 at Björnhovda also show that surface finds of stone axes of different fashion may well derive from disturbed LN burials, which is contrary to what could be argued from the graves presented in the review. The lack of osteological remains in the Björnhovda burials shows that conditions for the preservation of bone vary on the Island and, contrary to what is often assumed, not all sites on Öland contain well preserved bone material. As a final conclusion, it can be stated that burial customs on Öland in the LN obviously varied and not all burials are marked by visible stone structures. Additional burials of various kinds will most likely be found in the future in LN contexts.

References
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Mören - More Than a Dull Weekday: Ritual and Domestic Behavior in Two Late Neolithic Contexts in Southern Möre

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Abstract-This paper explores two excavated prehistoric sites Möre and Söderåkra from the Late Neolithic/Early Bronze Age. They are interpreted to be situated within the same cultural context and located quite close to one another in an area south of Kalmar. The two sites are from the same time frame but the structure and artifact material show differences at the two sites. This is discussed as due to that domestic and ritual specializations occurred at various sites.

Introduction
Between 1997-1999, several excavations were conducted in connection to the expansion of infrastructure in Möre, south of Kalmar (Magnusson 2001). Some 15 sites were excavated by Kalmar County Museum during the project. The archaeological remains exhibited considerable variation including prehistoric graves, settlements, and evidence of agricultural activities. The chronology spanned from early Neolithic to the Viking Age. A suggested interpretation of the relationship between these sites, and how to relate them to a general settlement pattern in the region, is included and presented. In this paper the focus is set on two of the excavated sites, Mören and Söderåkra (Figure 1). Prior to the discussion on the sites a brief overview of the geology of southern Kalmar County and the Late Neolithic (LN) material found is presented.

The landscape south of Kalmar County is characterized by a varied geography. The bedrock on Öland consists of lower Ordovician limestone, resting on a layer of alum shale. A limestone plateau slopes gently to the east; the upper edge of the limestone plateau forms the Western escarpment. The chalky soil provides good conditions for preserving osteological material. In contrast, the bedrock in the southeastern part of the Swedish mainland is dominated by acidic rocks such as granite and gneiss. Along the coast of southern Möre is a layer of Cambrian sandstone, which creates a flat landscape broken by eskers. On the mainland, numerous small watercourses cut through the landscape towards Kalmarsund. There are only a few lakes in the area, almost all are drained today. Despite the vast natural geographic disparities in the region, it is important to note the outlines of the prehistoric settlement patterns in the region as a whole.

Late Neolithic Sites in the Region
Knut Stjerna, from Uppsala University, initiated a survey in the early 20th century, which investigated when various regions of Sweden were populated. Nils Åberg sur-
veyed Kalmar County, and made a compilation of stray finds from museums and larger private collections (Åberg 1913, 1923). Most of the LN artifacts in the region consist of simple shaft-holes axes, flint axes, and flint daggers. Simple shaft-hole axes are common both in coastal areas as well as inland regions (Åberg 1913, 1923; Gurstad-Nilsson 1993, 1995, 1999). Simple shaft-hole axes are not evenly dispersed in the landscape and appear in varied concentrations, especially linked to Ljungbyån, Hagby, and Halltorp parish in southern Möre (Gurstad-Nilsson 1999:189).

During a field survey project, conducted in Kalmar municipality during the 1980s, some 60 prehistoric sites from LN/Bronze Age were found (Westergren & Hansson 1987). However, only a small number of the sites have been excavated. The evidence from a majority of those sites consists of lithic material and pottery. In addition to the documented settlements, a relatively large number of stray finds bear witness to prehistoric activities in the area.
Only a few LN graves are documented from the southern part of the Kalmarsund region, primarily on Öland. In total, there are about 15 excavated LN graves on Öland (e.g. Pettersson 1956; Holgersson 1976; Schulze 1978; Papmehl-Dufay, 2009:47pp, also see Papmehl-Dufay this publication). Mortuary traditions are mixed, and simple inhumations in the ground, as well as monumental grave types, are represented. In Karlevi, on Öland, an archeological excavation in 2009 revealed a pit containing cremated human remains 14C-dated to LN (Alexandersson & Petersson 2010). The centre of Småland exhibits a large number of gallery graves. In contrast, there are only a few documented LN gallery graves in the southern region of Kalmar County, almost exclusively represented by small stone cists (Johansson 1962; Hagberg 1979; Gurstad-Nilsson 1999:194p). The difference in distribution between stray finds and graves is considerable. However, it is likely that the spatial distribution of many stray finds actually are caused by modern cultivation. Surveys in East Central Sweden indicate that many shaft-holes axes originally were deposited in graves (Lekberg 2002).

In 1908, T.J. Arne excavated a middle Neolithic passage grave in Mysinge, on southwestern Öland (Arne 1909). The investigation focused on the chamber, and skeletal remains from at least 56 individuals were revealed (Ahlström 2009:82). Flint axes, bone needles, a bone tile and at least seventeen amber beads were among the items found in the grave/chamber. The bone tile has often been referred to as a wrist guard belonging to the continental Beaker culture (Malmer 1962; Gurstad-Nilsson 2001:228p). During an archaeological survey at Hunneberget, a similar bone tile was found and 14C dated to LN. Experimental studies showed that it is likely a badge for tile band weaving (Balic & Edring 2003; Balic & Knarrström 2007), an interpretation proposed already in Arne’s investigation report from Mysinge (Arne 1909). 14C-datings on part of the human skeletal material from Mysinge implicate a Bronze Age presence (Erikksson et al. 2008a:39p). Several of the artifacts found in the tomb, except the amber beads, likely belong to a secondary LN burial.

The most famous LN site in the region is situated near Igelösa, some 20 kilometers south of Kalmar. During the late 19th century, two flint daggers, (Lomborg type IV) about 30 cm long were found underneath a stone slab during construction work. When they appeared, they were positioned with the handles in opposing directions (Hofrén 1925). An additional deposited flint dagger was found during the investigations at Mören, near the base of a large stone (Nilsson et al. 2001).

**The Möre Excavation**

During the road construction project in 1998, an archaeological investigation was carried out on the north-eastern shore of Mören (Nilsson et al. 2001). Towards the end of the 19th century, Mören was one of the largest open waters in the region, but it was later drained. Mören is now a 34 hectare cultivated area. The dark and humus filled soil indicates that the arable land largely consists of cultivated wetland. The excavation revealed
seven Iron Age houses and the remains of an iron-smelting furnace. Within the investigation area, a 15 by 20 meter large complex prehistoric structure was found. The structure was made up of three different sections (Figure 2). The outer section of the structure was light grey and slightly colored by humus and charcoal. The soil in the centre of the structure was darker, surrounding an area of stones, some of which were fire cracked.

![Figure 2. The Neolithic structure with the surrounding prehistoric features](image)

No other constructions or archaeological features associated in any way with the structure were identified in the vicinity. Initially the site was interpreted as a gallery grave. Considerable time and effort was spent locating the remains of a chamber, without success. A feature was located at the northern rim of the investigated area and activities associated with the structure may have occurred further north. Since the investigated structure was located in an area of cultivated land a surface survey was performed. The survey resulted in only a small number of stone lithics. Several m² pits were dug in the structure. They displayed a fairly rich and varied material. The artifacts were unevenly dispersed and primarily located in the north-eastern section of the structure. Burnt bone material, grain, some pottery, stone and flint waste/tools, a grain-stone, and a bone needle were among the findings.

An archaeobotanical analysis was carried out, which revealed burnt grass, charcoal from small branches and twigs, probably oak. A total number of 137 carbonized grains, primarily naked barley (*Hordeum nudum*) and emmer wheat (*Triticum dicoccon*), appeared
when the soil was water sieved. The combination of these two dominant cereal types is typical in LN contexts (Nilsson et al. 2001:90). Approximately 2000 burnt bones were collected and analyzed. The collected bone material was severely fragmented, which prevented any general identification of species. Bones from domesticated animals dominated the material which could be identified to animal family name.

Four flake scrapers, made from polished flint axes or chisels, along with a flint dagger blade (burnt), and five pressure flaked arrowheads are among the more prolific artifacts in the tool assembly (Figure 3). Two of the arrowheads were burnt. The amount of stone and flint residue was modest.

A total number of 1766 pieces of pottery, approximately 2.5 kg, was found, and at least 16 separate vessels were identified (Petersson 2001). The pottery was dated to the LN period due to the characteristic decoration (barbed wire). Several cordons, separated from the vessel, demonstrated that those had been separately made and attached to the vessel before burning (Figure 4). According to the clay analysis, the vessels were made of clay that had been collected elsewhere, in multiple locations, which indicates that the pottery originated from different regions (Stilborg 2000, Petersson 2001:183).

During the primary excavation and removal of the structure, a posthole was identified. The posthole was located underneath the investigated stratigraphy in the centre of the features. A chemical analysis of soil samples showed no chemical difference between
the soil in the posthole and the layer above. The documentation presented represents a varied material. LN activity was indicated whenever the artifacts could be dated.

Two $^{14}$C samples, from grain and a burnt twig, confirmed that the organic material was contemporary with the dates made on the tools and pottery 2500BC-2140BC, 2340BC-1940BC ($2\Sigma$) (Nilsson et al. 2001:212).

Another significant observation was the frequency of fragmented material at the site, a phenomenon not uncommon in LN contexts (Holm et al. 1997). Pottery and flint objects appeared to be intentionally dissolved by fire and/or manual fragmentation. The flint dagger blade indicates that it was a rapidly accumulating process. One fragment was found on top of the stratigraphy, the other on the bottom. It seems unlikely that the disposition of its pieces is due to post depositional disturbance.

**The Söderåkra Excavation**

Another investigation was conducted in Söderåkra, 20 km south of Kalmar. The site was located on an eastbound slope towards a small stream named Bruatorpsån (Alexandersson et al. 2001).
When the plough soil was stripped from a 34 600 m$^2$ large area, a 14x6m, two aisled, LN house was discovered. The house was situated on a sandy plateau in the northern part of the excavated site. The supporting roof posts of the house were robust, whereas the walls were made of considerably weaker posts. A number of prehistoric features were discovered in close proximity to the house, and a $^{14}$C analysis indicated that some of the features were contemporary with the house (Figure 5). Finds in some of the features suggest an interpretation as waste pits. A number of artifacts, pressure-flaked arrowheads and pottery, were also found in the area, and chronologically corresponded to the house. No cooking pits were found, however, a few dark spots could be the remains of hearths.

Approximately 107 ceramic shards, from 21 or more vessels were found in close proximity to the house (Petersson 2001:180pp). According to the analysis, clay used for the vessels was brought from the same area, and could be collected locally (Stilborg 2000, Petersson 2001:183). A concentration of flint residue was found near the house, predominantly consisting of Senonian or Danien flint. Surrounding the house, an organization of strictly divided activity zones were indicated, a conclusion based on the segregated occurrence of different materials.

**Two Sites - Same Context?**

Mören and Söderåkra reveal evidence of different activities and purposes. The purpose of the Söderåkra house appears to have been domestic, nothing indicates activities beyond a prosaic routine. It has already been emphasized that the pottery was made on site from local material. The house itself seems to have been well organized with specific areas for everyday chores.

The Mören site presents an entirely different context, characterised by great variation in categories, origins, depositional patterns and seemingly intentional fragmentation of objects and materials. Since the clay used for the vessels were not collect locally, it may not be too farfetched to assume that they were produced elsewhere. A ritual agenda seems to have been present.

Much of the documentation denotes the presence of agricultural activities, i.e. domesticated animals, and grain/grain stones. The occurrence of small, charred twigs and branches could indicate use of leaf harvesting. An interpretation strengthened by the occurrence of flint artifacts, which are interpreted as leaf knives during the LN (Welinder et al. 1998:149-150). Osteological analysis conducted on Öland suggests that it is not until the LN that an increased presence of agriculture is detectable in the local economy (Eriksson et al. 2008b). A similar development on the mainland, during the LN, is indicated by a pollen sample from Edeborgs pond, north east of Mören (Svensson 2001). The Mören context reflects a period in which new mentalities and traditions were negotiated.
An interpretation regarding farmsteads has been associated with LN houses, such as the house at the Söderåkra site. The Söderåkra example is in all probability not unique to the region. LN stray finds in the south of Möre have been suggested to represent solitary farmsteads (Gurstad-Nilsson 2001:145). If so, objects such as shaft-hole axes and flint daggers may indicate scattered farms in the landscape. Taking into account the location of the Möre site, on a ridge in close proximity to Lake Mören, a communicative aspect or element, should be included in the interpretation of the two sites and the surrounding landscape. We are thus looking at two sites with two functions in the same context, as one ritualized site with ties to several nearby prosaic houses/farmsteads connected by traditions and kinship.

References


Pottery in the Well - The Significance of Late Neolithic/Early Bronze Age Decorated Pottery in East Sweden

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Abstract - A small amount of decorated pottery is evident from Late Neolithic to the Early Bronze Age Period. Compared to the preceding Battle Axe and Pitted Ware cultures there is considerable decrease in decorated pottery and numbers of motifs. It is suggested that the decline in decoration during LN I, LNII and EBA1a indicates a change in ethnic consciousness, as the ornaments historically refers to a shared past when decorated pottery was made. The distribution of the LNII decorated pottery also indicates a specific geographic occurrence along the Swedish east coast and on the Baltic Islands. Does this indicate an ethnic group or does it represent trading routes?

The Material
The material culture of the Late Neolithic/Early Bronze Age in Scandinavia shows great uniformity. It underwent a change towards even greater homogeneity during the subsequent period. This was due to an increase in bronze trade. Scandinavian populations were attracted to this new material and were involved in trade and exchange systems with continental Europe. Initially, all Bronze artefacts were imported, but during Bronze Age proper many of the artefacts were locally produced, while the material (copper and tin) still had to be imported. In the Lake Mälaren district, long-standing relations with areas in the East (e.g. current Russia and beyond) diminished and one began to focus on southern bronzes (Karlenby 2002:114pp). Groups living in Mid-Sweden appear to have had ambiguous attitudes and fluctuating interests with respect to southern and eastern relations. (a.a.; Graner & Karlenby 2007:162). Contacts with Eastern areas began to strengthen again during the late Bronze Age.

Ornamentation on pots did exist during the Late Neolithic (LN) and Early Bronze Age (EBA) periods. During this time, the pottery in Scandinavia underwent a change from the beautifully decorated vessels of the Pitted Ware and Battle Axe Cultures to the virtually undecorated pottery of the Scandinavian Bronze Age (Eriksson 2009:147-148). During the LN phase the ornaments show great similarities with the ornaments of the preceding Battle Axe Culture. A great variety of imprints from cords and combs appear placed in lines and angular shapes with many and inspired variations (Eriksson 2009:147). During the transition from the LN to the EBA, between 1700 and 1500 BC, pots were decorated in exceptional cases only. Decoration also became less elaborate and usually carelessly applied onto the pots. The designs often consisted of simple “herring bone” patterns, both vertically and horizontally applied to the upper part of the pots (Ibid 2009:148). These designs were often combined with rim-cordons, a fairly common decoration on early Bronze Age pottery (Ibid 2009:147; 150, fig 70).
The limited occurrence of pots with ornamentation during LN, may be the sign of a last, desperate attempt to withstand the pressure from outside groups, initialised and introduced by way of contacts through bronze trade and import. The disappearance of decorated pottery must be viewed as a reaction to altered circumstances in society.

Figure 1. The two pots from Eriksborg, outside Västerås. Drawing: Gunlög Graner.

Two pots with this type of decoration were found in a well on a LN – EBA settlement outside Västerås (Karlenby et al. 2005; see Figure 1). The two vessels were situla-shaped with a narrow lower part according to the style of the time. They were equipped with rim-cordons and simple line ornaments. The vessels were large. One was 25 cm high, with a 20 cm rim width; the other was almost 40 cm high with a 30 cm rim width (Ibid:26pp). In addition to these two vessels, the bottom of a pot of probable similar shape, and a nearly intact small mug or cup, only 5 cm high, were found in the well (Ibid:28). In the fill we also found the butt part of a battle axe, shards from at least three additional ceramic pots, burnt and un-burnt bones mainly from sheep/goat and cows, some small fragments of quarts, and at the bottom of the well a ladder made from a cut out log (Ibid:23pp).

The two pots were decorated with simple lines carved, likely scratched, into the surface with a stick or pin. The larger of the vessels had 5 cm long lines organised in a way that they looked like spruce twigs. On the smaller vessel, the lines were 2-3 cm long and slightly curved, giving the appearance of a giant’s nail imprints. The decorations had
been applied on the upper and middle parts of the pots; the bottom third was left undecorated. The large pots were almost completely preserved – though in shards – suggesting that they had been deposited in the well as intact objects, possibly with some kind of content. The two large vessels and the battle axe found in the filling material suggested that they were part of rituals in connection with the closing of the well. The pots, once deposited intact as a kind of offering, were damaged and crushed by the weight of the fill and the wear and tear of time.

The LN/EBA settlement at Eriksborg in Västerås was excavated in 1997 and revealed the remains of a small village. The settlement has been dated to a short phase in the transition from Neolithic to Bronze Age (Ibid:31). It was possible to identify four separate farms, possibly some arable land, and pastures (Ibid:32-33). The site, with its village-like structure, is quite unique in Middle Sweden. There is only one other settlement, in Almhov outside Malmö, that shows a similar type of organisation (Brink 2005). The standard farm of the time has been considered to be solitary, but that is contradicted by Eriksborg and Almhov.

In addition to the two vessels from Eriksborg, this special type of decoration has been found in Dragby, Vrå and Apalle in Uppland, Alby and Galtbacken in Södermanland, in the cave Stora Förvar on Stora Karlsö, on Bornholm and in Nosaby in NE Scania (Eriks-son 2009:147; Jaanusson 1985:43, fig 2; Dunér & Evanni 2003, Schnittger & Rydh 1940, pl 52-65; Nielsen & Nielsen 1986:190-191; Strömberg 1955:76-77). The occurrence on Öland and Gotland is uncertain, but the many vessels on Stora Karlsö suggest that the type also is common on Gotland. Thus far only one example from Gotland of the right type (late type) design is known from Lauster on Fårö (SHM 20340). Three additional finds may be considered LN II or EBA finds but with different ornamentation (SHM 28516, St. Vikers, Lärbro parish; SHM 26353, Lilla Klintegårds, Väskinde parish; SHM 26347, Ösarve, Bäl parish).¹

Pottery with a different type of decoration has also been found from this time period. A near intact pot was found in Kyrsta, Uppland. It had horizontally applied comb-imprints on the upper part (Olsten-Molander & Wikborg 2006:155-156) This pot showed an almost identical dating of 1690-1500 BC to that of the vessels from Eriksborg (Ibid:185). A few decorated shards were found in the stone cist in Ingemarstorp in Västergötland. The design on the pottery was slightly different from that on the Eriksborg pottery, but Ingemarstorp is situated outside the area of distribution of “spruce-twig” and “giant’s nail” imprints (Oldeberg 1954:15pp). These designs are very special to the Baltic shore region, and the pots from Kyrsta and Ingemarstorp can not easily be associated with the style. In the first case the comb-imprint style suggests a more eastern inspiration and in the other relationship with South-western Scandinavia is apparent (Lavento 2001; Björ- hem & Säfvestad 1989:28pp).

¹ For information on Gotlandic finds of LN-EBA ceramics I thank Joakim Wehlin.
One pot from Finnekumla, Västergötland has actually been decorated with something that looks like the giant’s nail imprints, but otherwise the vessel does not resemble the large, situla-shaped vessels in eastern Sweden (Oldeberg 1954:37, fig 62). It rather looks like a small flower pot and was found in a stone cist. It might be earlier than the Eriksborg ornamental styles. Most of the decorated pottery in Oldeberg’s text apparently belong to the older decorated ceramic of LN I with more varied designs (Eriksson 2009:148). With limited material, such as the few shards of “spruce-twig” and “giant’s nail” imprints, it is not possible to do a proper statistical analysis, and it would be virtually impossible to create a reasonable distributional map. The results would either be
purely coincidental, or they may expose an actual cultural distribution, but we would not be able to confirm or refute their accuracy.

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Considering the map in Figure 3 (a distributional map nevertheless) it seems to suggest an easterly distribution of the LNII-decorations. The map is based on an original from Hille Jaanusson (1985:47, fig 5), that shows the then known distribution of rim-cordon ware. There has been a considerable increase in the number of finds. If the total number of rim-cordon ware finds were to be plotted, the number of finds would be considerably higher. Large quantities of rim-cordon ware have been unearthed from all areas of southern Sweden, so the fact that so few decorated shards from LNII/EBAla have been found in an otherwise abundant material may suggest that the distribution highlights a certain phenomenon, an actual archaeologically identifiable occurrence.
The decorated pots from LN I originate from late MN pottery, especially the conglomerate “third group”, with their ornaments showing influence from the Pitted Ware and Battle Axe cultures. The rich and innovative set of patterns of this ceramic tradition is passed on to LN I. Over time, the number of different designs decreases so that by the end of the Neolithic, the set of patterns consists of only simple lines (horizontal or vertical) and comb imprints. This tradition appears to survive the longest in eastern Sweden and on the Baltic Islands.

It is an interesting fact, that apart from the mainland shards, those few on Gotland, and the vessels in Scania, the absolute majority of the material has been found in the cave Stora Förvar on Stora Karlsö, just outside of Gotland (Schnittger & Rydh 1940). The vessels from the island may stem from activities of a more mundane character, but even so the Stora Förvar cave on the Island is in its own right a unique place. It has been used as shelter by hunters and cattle breeders for thousands of years. The caves may even at times have been used as trading stations for people from both near and far, and it is possible that trade on the island was conducted on a regular basis during the LN and EBA.

The Houses
The decorated pottery material of LNII/EBA1a is too small to convincingly prove the hypothesis of trade or local/or group identity, thus I will attempt to use the change in building tradition to reinforce the arguments. The building tradition appears homogenous in all of Southern Sweden and development has been consistent. The two-aisled houses of Fosie IV in Scania, for example, show an inner post construction, which in great detail appears similar to the two-aisled houses of Middle Sweden. There were three or more roof-carrying posts along the middle of the house, and the walls were built with closely placed posts, functioning both as roof support and walls (with wattle-and-daub). A closer inspection however shows that most houses from Middle Sweden had a much simpler wall construction with fewer posts, and the houses were narrower and sometimes trapezoidal (Karlenby et al 2005:14-15, hus D, E). The Fosie-houses had an elaborate wall construction with double rows of posts, and an unmistakably rectangular shape (Björhem & Säfvestad 1993:46-47, house 22).

The three-aisled house was introduced to Middle Sweden during the early Bronze Age, concurrent with its appearance in southern Scandinavia. However, there are 14C-datings from Uppland, for instance at Sommaränge skog, which suggest a date as early as 2000-1500 BC (Forsman & Victor 2007:137pp): The two-aisled house type existed as late as 1400 BC. One of the two-aisled houses at Ryssgärden, Upland is dated to c. 1500 BC (Karlenby 2008:91-92). For several reasons I argue that the early date of the three-aisled house in Sommaränge skog is erroneous and that this type should coincide with the general dating of the three-aisled house to 1600-1400 BC. (Artursson 2009:96). Most likely the three-aisled house should be dated to 17th century BC. The early appearance of the three-aisled house type in Mid-Sweden indicates good communications and contacts
between the south and this area, but the two-aisled house tradition remained and demonstrates a cultural feature, eventually on its way to disappear, but long maintained. I argue here that certain places kept the old tradition which may be indicative of a kind of conservative stubbornness to maintain the old and safe (two-aisled house) instead of embracing the new ideas (three-aisled house).

The settlement in Eriksborg indicates that it was rather short-lived, perhaps no more than a century, or three generations. Other settlements from the same time usually continued well into the Iron Age. The topographical position of the site also differs from other, contemporary settlements in that it was situated a kilometre away from the shore and “hidden” away behind higher ground. It seems the inhabitants didn’t want to be interfered with or participate in joint activities with their neighbours.

The decorated pottery of the LN has three significant characteristics; it is rare, it is geographically limited, and it is found in circumstances that are out of the ordinary. Sometimes whole vessels have been deposited in pits or wells, as some kind of sacrifice. In other cases, circumstances clearly point to a different type of ritual situation. The rarity and the ritual connections speak to uniqueness and the geographic limitations may suggest that this is the result of a regional group of people who viewed themselves as belonging together. Perhaps it could be a reaction to a changing world. I suggest that the designs could mark the end of the once proud tradition of pottery decoration, from the rich and varied assemblage of motifs of the Battle Axe Culture to the last “death twitches”, represented by the sketchy lines of “spruce twigs” and “giant’s nail” imprints.

In Eriksborg the vessels were found deposited in a well, obviously a ritual offering concerning the closing of the well and abandonment of the settlement. In Kyrsta, Uppland, a
decorated pot was found in a similar arrangement as an offering. The excavation members dismiss the idea that the find was an offering, even though burnt human bones were found in the context (Olsten-Molander & Wikborg 2007:30-31). In Scania, it is indicated that five nearly intact vessels were found in a pit in the ground, an obvious deposition (Magnusson 1949). The only certain shard from Gotland (Fårö) was found in a grave (SHM20340). The shard from Bornholm was found in a large Late Neolithic longhouse at Limensgård. As postholes and grooved fundament for inner walls were the only constructions preserved, the shard must have come from one of them (Nielsen & Nielsen 1986:190-191). It may have been a house sacrifice. Pot shards were commonly placed at the bottom of postholes all through prehistory.

The Ethnic Approach
Ethnicity is difficult to detect by means of archaeology. It is only rarely expressed through materiality. Ethnicity is a state of mind, connecting people who consider themselves as belonging together for some reason or another (Barth 1998; Hylland Eriksen 2007). Ethnicity is the idea of a united past. Traditions and heritage are essential in the ethnic construction of history and cultural continuity and it becomes important to maintain stability in the definition of what it means to belong to a certain ethnic group (Hillerdal 2009:13). Ethnicity usually evolves as a strategy of group in meeting with another group. It is the negotiation of “third space”, where new and original situations occur. It is not a mixture, or an amalgamation of the two, but a completely new state of affairs (Graner & Karlenby 2007; Bhabha 2004). It is in this “third space” that ethnicity’s stability makes it possible – and perhaps necessary – to express ethnicity visibly. Ethnicity is both a united past (inwards) and a distancing from the other (outwards).

Ethnicity does not necessarily have to be expressed through objects, but when it is, ethnicity is commonly – but not exclusively – expressed through clothing and other body decorations (for instance Romani or Saami). Preserved from the Bronze Age are usually more robust materials, such as pottery, stone artefacts and, to a certain extent, metal objects. These objects probably constitute a fraction of the original material. Organic remains on the whole are very rare. Wood, for instance, must have been one of the most common raw materials and objects were made in abundance, but only a handful of these are preserved today. Clothing is only occasionally preserved. The clothes from the Danish burial mounds are unique and intriguing but nevertheless not numerous enough to help us discuss ethnic values. Is it then possible to discuss the existence of an ethnic identity? On the one hand, we have to consider the homogeneity of the cultural remains in Southern Scandinavia and Middle Sweden, and on the other hand the long distance contacts that trade and exchange may have provided. The many contacts with areas in Europe bear witness to an extensive import/export of bronze objects in EBA. It is also important to remember how central the eastern connections were during the Bronze Age, especially during the Late Bronze Age, as a result of the introduction of iron technology (Hjärtner-Holdar 1993).
The decoration of the ceramics may be ethnic as it refers to a united history of pottery decoration. The pottery of LN I had a rich collection of ornamental motifs, inherited from the Battle Axe and Pitted Ware pottery and the amalgamation of these two traditions known as the “Third group” (Graner & Larsson 2005). The designs of LNII/EBA1a were simple, not especially elaborate and only formed a small group of motifs, as lines, comb imprints and false cord impressions, and of course the rim-cordons (Eriksson 2009:147). Though the designs are few and plain, they are a continuation of earlier traditions, and must have been experienced as part of an age old tradition. They were produced within a limited geographical area, and used for special, maybe ritual purposes. The possible connection between rituals, tradition, and historical reference suggests an ethnic background. The distribution along the Swedish east coast on the other hand suggests that the tradition of decorating followed a trade route towards the south, possibly ending in Poland. Here we also find pottery with rim-cordons (Dąbrowski 2004:47pp). This element may have been inspired through cultural contact and trade with the area. The Scandinavian tradition may on the other hand be a historical reference to the Battle Axe pottery of type E:1, large storage vessels with flat bases and rim-cordons (Eriksson 2009:152).

The decorated pottery has likely been manufactured with a historic reference to a united past represented by the ornamentation. It is therefore possible that it is the result of an ethnic identity. Since the tradition is slowly fading away during the first period of the Bronze Age, it must have been a vanishing identity, subsequently replaced by another identity, expressed in the Scandinavian Bronze Age tradition.

**Summary**

The material culture of the Late Neolithic/Early Bronze Age in Scandinavia shows great uniformity. This essentially was the result of an increase in bronze trade.Population groups living in the Scandinavian area were attracted to this new material and thus drawn into the trade and exchange systems of continental Europe.

During the Late Neolithic and Early Bronze Age the pottery in Scandinavia underwent a change from the beautifully decorated vessels of the Pitted Ware tradition and Battle Axe cultures to the virtually undecorated pottery in the Scandinavian Bronze Age tradition. During the transition from the Late Neolithic to the Early Bronze Age, the period between 1700 and 1500 B.C., pots were still decorated in some cases, but decorations became less elaborate and were usually carelessly applied onto the pots. The occurrence of pots with ornamentation in Late Neolithic was limited, and is suggested to be the sign of a last, desperate attempt to withstand the pressure from outside groups, initialised and introduced through contacts in connection with bronze trade and import. The disappearance of decorated pottery must be seen as a reaction to altered circumstances in society, a reference to a united history, expressed through pottery ornaments.
However, ornamentation on pots continues during the Late Neolithic and Early Bronze Age. Initially, the ornaments showed great similarities with the ornaments of the preceding Battle Axe culture, where a great variety of imprints from cords and combs appeared, placed in lines and angular shapes. During the transition period, the designs often consisted of simple herring bone patterns, both vertically and horizontally applied to the upper part of the pots. These designs were often combined with rim-cordons, a fairly common decoration on early Bronze Age pottery.

Two pots with this type of decoration were found in a well on a Late Neolithic – Early Bronze Age settlement outside Västerås (see Figure 1). The two vessels were situla-shaped, with a narrow lower part according to the style of the time, and were equipped with rim-cordons and simple line ornaments.

The decorated pottery of the Late Neolithic has three significant characteristics; it is rare, it is geographically limited, and it is found in circumstances that are out of the ordinary. The rarity and the ritual connections speak to uniqueness and the geographic limits may suggest that it is the result of a regional group of people. The designs mark the end of the tradition of pottery decoration, represented by the sketchy lines of spruce twigs and giant’s nail imprints.

In addition to the two vessels from Eriksborg, this special type of decoration has been found in a handful of places spread from the Lake Mälaren district in the north to Bornholm and North-east Scania in the South. On the Island of Stora Karlso, a considerable number of pots with this type of decoration have been found. There are other decorated pots from the Late Neolithic, but in most cases they belong to the earlier phase LNII, and they also appear outside the LNII pottery area. This might indicate a declining tradition of decoration.

The distribution of decorated pottery is exclusively found along the Swedish east coast and the Mälar Region. There are no parallels to this pottery in the eastern Baltic. There is no Finnish or Baltic pottery of this type.

The decorated pottery is almost always found connected to special circumstances. It has either been sacrificed in wells, pits, or postholes in houses, or it may have been found in graves. The vessels from Stora Karlso may stem from activities of a more mundane character but, even so, the Stora Förvar Cave on the Island is a unique place. It has been used by hunters and cattle breeders as shelter for thousands of years. The caves may even at times have been used as trading stations for people from near and far. Trade may have been conducted on the island on a regular basis during the Late Neolithic and Early Bronze Age. Does the distribution of decorated pottery point to a trade route or does it rather indicate a geographical area of ethnicity?
Ethnicity is difficult to detect by means of archaeology. It is only rarely expressed through materiality. Ethnicity is a state of mind, connecting people that consider themselves as belonging together. Ethnicity is the idea of a united past.

Ethnicity does not necessarily have to be expressed through objects. Is it then possible to discuss the existence of an ethnic identity? On the one hand, we have to consider the homogeneity of the cultural remains in Southern Scandinavia and Middle Sweden, and on the other the long distance contacts that trade and exchange may have provided. The decorated pottery has probably been manufactured with a historic reference to a united past represented by the ornamentation. It is therefore possible that it is the result of an ethnic identity. Since the tradition is slowly fading away during the first phase of the Bronze Age, it must have been a vanishing ethnicity that over time was replaced by another, perhaps that of the Scandinavian Bronze Age.

References


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