Late Mesolithic marine territoriality in coastal southern Scandinavia

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Abstract – This paper attempts to identify traces of Late Mesolithic maritime territoriality in the coastal areas of southern Scandinavia. On the basis of a study of the distribution of settlements and graves of the period it is evident that these have significantly divergent distributions in the landscape and, consequently, that the distribution of the graves does not reflect the demographic situation of that time, but something else. It is concluded that an important fraction of the known Late Mesolithic graves is secondary, i.e. not directly connected to the settlements with which they appear to be spatially related, and are located at strategic points in the landscape, placed as territorial markers at some distance from where the people buried in them lived and died.

Key words – archaeology; Mesolithic; Late Mesolithic; territoriality; territorial markers; marine resources; hunter-gatherers; EAA annual meeting 2019

Titel – Marine Territorialität in den Küstengebieten Südskandinaviens im Spätmesolithikum

Zusammenfassung – Ziel dieses Beitrags ist, Spuren spätmesolithischer maritimer Territorialität in den Küstengebieten Südskandinaviens zu identifizieren. Die Resultate einer Untersuchung zu den Verteilungen von Siedlungen und Gräbern lassen deutlich voneinander abweichende Lokalisierungen dieser beiden Quellengattungen in der Landschaft erkennen. Die Verteilungsmuster der Gräber spiegeln folglich nicht die demographische Situation dieser Zeit wider, sondern etwas anderes. Daraus lässt sich schliessen, dass ein bedeutender Teil der bekannten spätmesolithischen Gräber sekundär ist. Sie stehen nicht in einem direkten Bezug zu den Siedlungen, mit welchen sie auf den ersten Blick räumlich verbunden zu sein scheinen. Vielmehr befinden sie sich an sich an strategischen Grenzpunkten zwischen *«landscapes»* und *«waterscapes»*. Die Gräber dienen als territoriale Markierungen und liegen in einiger Entfernung von den Plätzen, an denen die darin begrabenen Menschen lebten und starben.

Schlüsselwörter – Archäologie; Mesolithikum; Spätmesolithikum; Territorialität; territoriale Markierungen; marine Ressourcen; Wildbeuter; EAA Jahrestagung 2019

Introduction

It can be difficult to conceive of marine areas as being separated into well-defined territories because their surface displays no obvious physical dividing features. Strict marine territoriality is, however, known in a number of cases from extant hunter-gatherer/small-scale cultures as an extension of their territoriality on land and, given its character, it must be expected to be a rather more general phenomenon than indicated by the few references to it (e.g. Cordell, 1978; Watanabe, 1964, 69-78; Yesner, 1980). The complex and varying adaptations to local coastal environmental conditions, including the varying species and amounts of available plankton, various fish species, other marine fauna and the vegetation, puts groups with intimate local environmental knowledge in a stronger position than others who lack this information and therefore supports development of the stable marine short-range territoriality of local social groups (e.g. Cornejo & Koppelmann, 2006; Fisher et al., 2015; Itoh et al., 2017; McGillicuddy, 2008). This paper presents an ethnoarchaeological argument for the existence of marine territoriality in the Late Mesolithic cultures of coastal Southern Scandinavia. The central element in this argument is that the distribution pattern of the known Late Mesolithic graves does not fit the demographic pattern indicated by the distribution of the settlements of the period. This discrepancy is explained as being due to the graves having been placed at strategic locations as territorial markers rather than where the deceased lived and died.

Hunter-gatherer territoriality in a social anthropological perspective

When applied to social anthropological reality, ethnography, social anthropology and ethnoarchaeology can support archaeological interpretations by providing models for what is possible in human small-scale society, and thereby breaching the cultural boundaries of accepted thinking in our industrial culture and expanding the space of multiple alternative possibilities.

It is important to be aware that no pristine hunter-gatherer groups exist today that represent a conservative cultural tradition extending back to the Stone Age. Small-scale cultures, now and in the past, have always been influenced and inspired by other cultures – even quite distant ones. Moreover, they constantly generate differences

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between their various sub-groups in a dynamic way. Small scale-cultures must, therefore, be understood as highly dynamic social systems that can adapt in many different ways to a specific environment, as well as to neighbouring cultural groups as described by so-called 'cultural ecology' (Barth, 1969; Shirokogoroff, 1924; 1935, 11-39). Recent hunter-gatherer cultures can provide information about small-scale societies who employ a hunting-gathering strategy or economy to exploit their environment.

There is a consensus today that hunter-gatherers generally have a territorial approach to the landscape they exploit (e.g. Cashdan et al., 1983; Endicot & Endicot, 1986; Freeman & Anderies, 2015; Marshall, 1976, 71-79; Rogers, 1969). This has also been documented for marine hunter-gatherers (e.g. Cordell, 1978; Watanabe, 1964, 69-78; Yesner, 1980). The significant small-scale variation in the spatial-temporal resource configurations of local coastal environments – including complicated daily, seasonal or annual migration patterns of fish and other fauna, as well as the variability in the availability of plankton (e.g. Fisher et al., 2015; Itoh et al., 2017; McGillicuddy Jr., 2008) – favours local groups with intimate local environmental knowledge and therefore supports the development of short-range marine territoriality. While such territories have a social and resource-strategic basis, their defence and maintenance involves cosmology and spirituality which may have a significant influence on cultural behaviour and material culture (Grøn et al., 2008a; Grøn et al., 2009; Oetelaar, 2016; Lovis & Whallon, 2016); a perspective that has previously been seen as being irrelevant in ethnoarchaeology (e.g. Binford, 1968).

The Evenk hunter-gatherers of Siberia appear among other groups in the ethnic mosaic of a large part of NW Siberia, where they earlier have formed a more geographically coherent group. They use domesticated reindeer for transportation and smaller herds for wealth storage. The dispersed Evenk groups still share a common ethnic and cultural identity (Grøn, 2016; Grøn & Turov, 2007; Shirokogoroff, 1929, 1-12). The Evenk have strong personal ownership of tools, killed prey, domesticated animals (dogs and reindeer) as well as physical objects and structures such as their dwellings. The dwelling is owned by the wife of the inhabiting family to such an extent that she is permitted to destroy this valuable structure if she so wishes, despite the obvious problems this creates for the other family members. Hunting territories are not owned by the Evenk but belong to the supreme (monotheistic) deity. The Evenk groups obtain the right to use their hunting territories through continuous ritual negotiation with local spirits representing the supreme god, who is not really able to concern himself with such details (Grøn, field notes).

The Evenk are very concerned with marking their clan territories so that other groups do not hunt in them without prior negotiated agreement

Fig. 1 After the butchering of an elk (moose), the eyes and genitals are placed on trees near the kill site as short-term territorial markers demonstrating to other groups that this area is in use as a hunting territory. Khatanga, Irkutsk County, Siberia. Photo Ole Grøn.

or in accordance with the general rules that allow travellers passing through other Evenk clan territories to hunt and fish for what they need for their daily survival (Grøn et al., 2008a; 2008b). Hunters violating these basic rules will be seen as attempting to take over parts of the local clan's territory, and their hunting will be perceived as an actual attack on the clan's right to its territory and, if possible, they will be immediately killed. Such conflicts are still not too rare today. It is, however, very difficult to obtain specific information about such recent conflicts, especially from members of the groups involved, even though the Evenk themselves generally see such territorial conflicts with ensuing casualties as a "*traditional Evenk cultural trait*". This is due to the Evenk complex of ideally not saying bad things about others or mentioning aggressive acts, partly in order to avoid reviving or enforcing the conflict themes in question (Grøn, field notes).

The genitals and eyes of killed animal prey are placed on trees as short-term territorial markers (**fig. 1**). Marks cut into the bark of trees, or bark pieces inserted into cuts in the bark, communicate the territorial rights of the local clan, among other things. Currently inhabited settlements are marked, by cuts being made in the nearest tree trunks etc., so they are highly visible from the passing river. It is considered extremely impolite for members of other clans to pass by without paying the local land users a visit, so that the latter are aware of who is passing through their territory. At unoccupied settlements, marked trees, built structures, sacred trees (bearing coloured rags), valuable equipment left behind, trees cut down for firewood etc. serve as territorial markers.

Fig. 2 A collapsed Evenk burial originally placed on two trees cut down to around 1.5 m above the ground, which have now rotted away, and with support stakes etc. This was placed far away from any settlement context in a clearly visible position on one side of the River Olenok, Siberia. From this position, the spirit of the deceased is thought to have protected the clan territory against malevolent intruders from other clans. Photo Ole Grøn.

Among the Evenk, graves are important territorial markers (**fig. 2**). The graves of deceased clan members, especially important ones, are often placed strategically in locations with no previous settlement but highly visible from communication corridors, typically larger rivers, thereby serving as spiritual guardians of their clan's territory (Grøn et al., 2008a; 2008b; field notes).

According to the available ethnographic, social anthropological and ethnoarchaeological information from different parts of the world, maintenance and defence of territories seems to have been a sensitive matter in some groups, triggering serious conflicts and war between clans or bands or forcing a challenged group to flee to another area (e.g. Burch, 1980, 276; Darmangeat, 2019; Endicot & Endicot, 1986; Helm, 1981, 329; Rasmussen, 1925, 194-195; Ray, 1963; Suttles, 1990, 85), while others had a rather peaceful balanced attitude (Marshall, 1976, 179-182). The rock art of Africa and Australia, and in Europe from the Upper Palaeolithic to the Neolithic, shows apparent incidences of humans killing other humans (Otterbein, 2004, 71-73). The previously mentioned pronounced Evenk reluctance to talk about conflicts seems to have parallels in other small-scale cultures (e.g. Briggs, 1970, 274-291). If this is a general feature of such cultures, it must be expected that the social anthropological information on conflict underestimates the extent of this phenomenon.

Seen in the light of the available social anthropological information, the archaeological data indicate the existence of territorial conflicts prior to European contact in North America (Bamforth, 1994; Lambert, 2002). Logically, the conflicts reflected in the skeletal material from Mesolithic Europe and the contemporaneous Near East and Africa should also, at least partly, be seen as the result of territorial conflicts. However, they seem to reflect some spatial and temporal variation in the "*aggressivity*", with some periods in some areas appearing quite peaceful (e.g. Ferguson, 2013; Lahr et al., 2016; Roksandic et al., 2006; Smits, 2012).

The use of the bodies of deceased group members as markers in strategic territorial positions is also well-documented from Australia, especially the northern part (Hiatt, 1969; Littleton, 2007; Littleton et al., 2013). The use of burials as territorial markers is apparently a much more general phenomenon than previously appreciated (Schroeder, 2001).

Late Mesolithic coastal settlement and burial patterns – a discrepancy

A general understanding of the Late Mesolithic coastal settlement pattern in Denmark is that the settlements of this period were mainly concentrated at the mouths of rivers, watercourses, inlets, fjords, in accordance with the so-called *"fishing-site model"*. It is interesting that this notion has been allowed to gain such acceptance and forms the basis for the marine archaeological management of submerged Stone Age sites in Denmark (e.g. Benjamin, 2010; Fischer, 1995), even though its statistical basis is problematic and its efficiency of detection surprisingly low, as it leads to the discovery of less than 1 % of the number of sites that would have been found on land (Grøn, 2018).

A study of Late Mesolithic coastal settlements in Denmark associated with ancient coastlines above present sea level today of fjords, inlets, as well as sections of sounds that form logical fjord-like territorial entities reveals quite a different reality. As the thoroughness of the surveys for such sites varies significantly from locality to locality, the existing data cannot be assumed to be highly representative. Despite this, it is obvious from the best surveyed areas that a dominating, number (75 %) of the settlements related to these water bodies are not placed at their mouths, but along their sides and at their bottoms. The postulated relationship between settlements and the mouths of rivers or watercourses seems to be imprecise but more correct due to the Late Mesolithic cultures' strong orientation against marine resources (e.g. Andersen, 1991; Grøn, 2018; Jensen, 2001, 157; Johansson, 1999; Larsson, 2016; Price & Gebauer, 2005) (**figs. 3, 5**).

If we turn from the distribution of the settlements to that of the approximately 80 known Late Mesolithic Danish graves, found at rather more than 20 locations, more than 90 % of these are situated in direct relation to inlets, fjords or fjord-like sounds that formed logical fjord-like territorial entities (**fig. 4**); this also includes the submerged examples (Albrethsen & Brinch Petersen, 1977; Andersen, 1970; 1987; 1991; 2001; Andersen et al., 1986; Brinch Petersen, 1990; Brinch Petersen et al., 1993; Kannegaard Nielsen & Brinch Petersen, 1993; Lass Jensen, 2016; Lund Hansen et al., 1973; Newell et al., 1979; Norling-Christensen & Bröste, 1945; Price et al., 2007; Skaarup & Grøn, 2004, 1-2, 5, 9; Uldum, 2011; Westerby, 1927, 9, 27-30).

Due to the changing sea level, tilting of the land surface (isostatic rebound), neotechtonics, as well as sedimentary dynamics especially at the mouths of inlets and fjords, it is not possible on the basis of the available data to reconstruct precisely the often changing morphology of these water bodies through the Late Mesolithic (e.g. Astrup, 2018: 37-77; Brandes et al., 2018; Christensen et al., 1997; Hoan et al., 2011; Mertz, 1959, 16-18; Pedersen & Gravesen, 2016). A classification of the sites and graves discussed in this paper within 20 % intervals of their estimated total depth into the waterbodies, they are related to, appears as a rather coarse but reasonably precise approach that can be used to envelope the morphological dynamics and at the same time facilitate comparison of the tendencies in their distribution within these

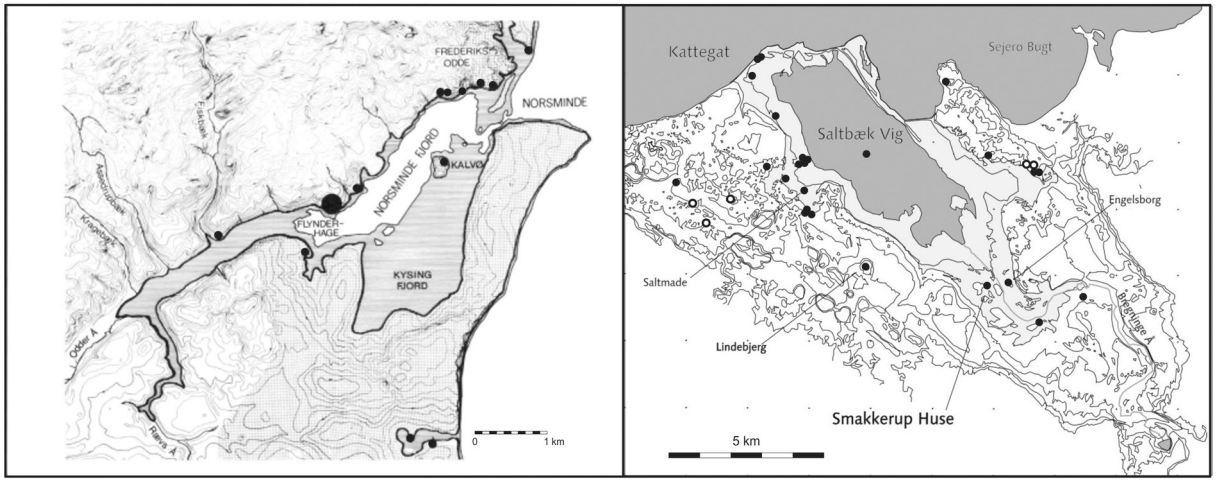

Fig. 3 *Left:* Norsminde Fjord with known Ertebølle sites marked with black dots. The large shell midden Flynderhage (marked with a large black dot) is located midway along its northern side, far from the mouth of the fjord as this was configured at the time. The Late Mesolithic coastline is shown with a thick black line. The sea is shown in white (after Andersen, 1991). *Right:* The *Saltbæk Vig area* with the location of the Ertebølle site Smakkerup Huse. The black dots mark the location of Ertebølle sites found in the archaeological survey, open circles mark stray finds of Ertebølle artefacts (graphics by Ole Grøn after Price & Gebauer, 2005).

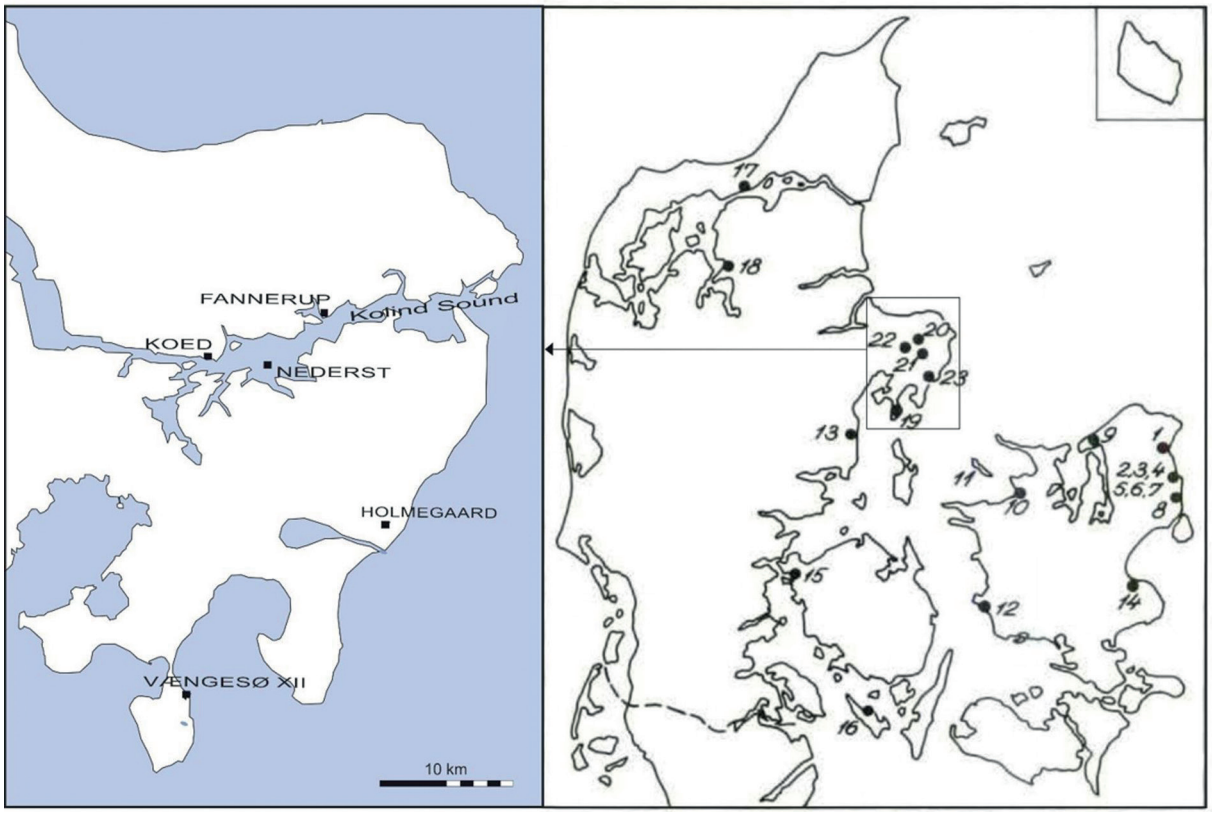

Fig. 4 *Left:* The locations of known Mesolithic burial sites on the Djursland peninsula, shown with the sea level as it was in the Late Mesolithic. The sites of Holmegaard and Vængesø II & III are variants of the most common pattern, the first is an inlet with a very wide opening, the second with a very narrow one. Some of the sites around Kolind Sound may represent a different pattern. *Right:* The known Mesolithic burials in Denmark: 1 – Nivågaard (Lass Jensen, 2016), 2 – Vænget Nord (Brinch Petersen et al., 2015) , 3 – Vedbæk Boldbaner (Albrethsen & Brinch Petersen, 1977), 4 – Henriksholm-Bøgebakken (Albrethsen & Brinch Petersen, 1977) , 5 – Gøngehusvej no. 7 (Brinch Petersen, 1990), 6 – Maglemosegaard (Brinch Petersen et al., 1979) . 7 – Stationsvej 19 (Brinch Petersen & Meiklejohn, 2003), 8 – Bloksbjerg (Westerby, 1927 , 27-30), 9 – Melby (Lund Hansen, 1973, 'Fund og Fortidsminder', the national archaeological database, place-nr. 010505-45), 10 – Dragsholm (Price et al., 2007), 11 – Sejrø ('Fund og Fortidsminder', the national archaeological database, place-nr. 030607-6) , 12 – Korsør Nor (Jensen, 2001, 230-32), 13 - Norsminde (Andersen, 1991), 14 – Strøby Egede (Brinch Petersen, 1990, 'Fund og Fortidsminder', the national archaeological database, place-nr. 050612-83), 15 - Tybrind Vig (Andersen, 2013; Uldum 2011), 16 - Møllegabet II (Skaarup & Grøn, 2004), 17 – Brovst (Newell et al., 1979, 51-53), 18 – Ertebølle (Madsen et al., 1900), 19 – Vængesø II & III (Andersen, 2018, 46-49, 198-200), 20 – Fannerup (Hougaard Rasmussen, 1990), 21 – Nederst (Kannegaard Nielsen, 1990; Kannegaard Nielsen & Brinch Petersen, 1993), 22 – Koed (Hougaard Rasmussen, 1990), 23 – Holmegaard (Andersen, 2018, 229-231). Graphics by Ole Grøn.

waterbodies. **Fig. 5**, is based on Late Mesolithic settlement data from the five presently best-surveyed and therefore most representative data sets from Danish inlet and fjord areas (Σ = 204) as well as the available information on the Late Mesolithic graves in Denmark from such positions (Σ = 76). The figure shows a distribution of the graves that deviates significantly from the demographic pattern indicated by the distribution of the settlements and roughly follows the pattern incorrectly ascribed to the settlements by the fishing-site model. A logical explanation for this discrepancy, with reference to ethnoarchaeology, would be that the graves do not represent the death sites of the persons they contain or represent but, in a significant number of cases, they have been placed somewhere else as territorial markers. One possibility is that the settlements at the mouths of the waterbodies discussed here have been used more than the *"inner"* ones. Here one should however keep in mind, that large settlements (e.g. Flynderhage and Smakkerup Huse) occur at inner positions as well as at their mouths and that the present population of known Late Mesolithic sites to some degree is the result of an investigative focus on the potential mouth-positions.

Fjords, inlets, and fjord-like sounds constitute logical territorial units to mark and defend against other groups. They form naturally delimited areas that provide protection against the wind from

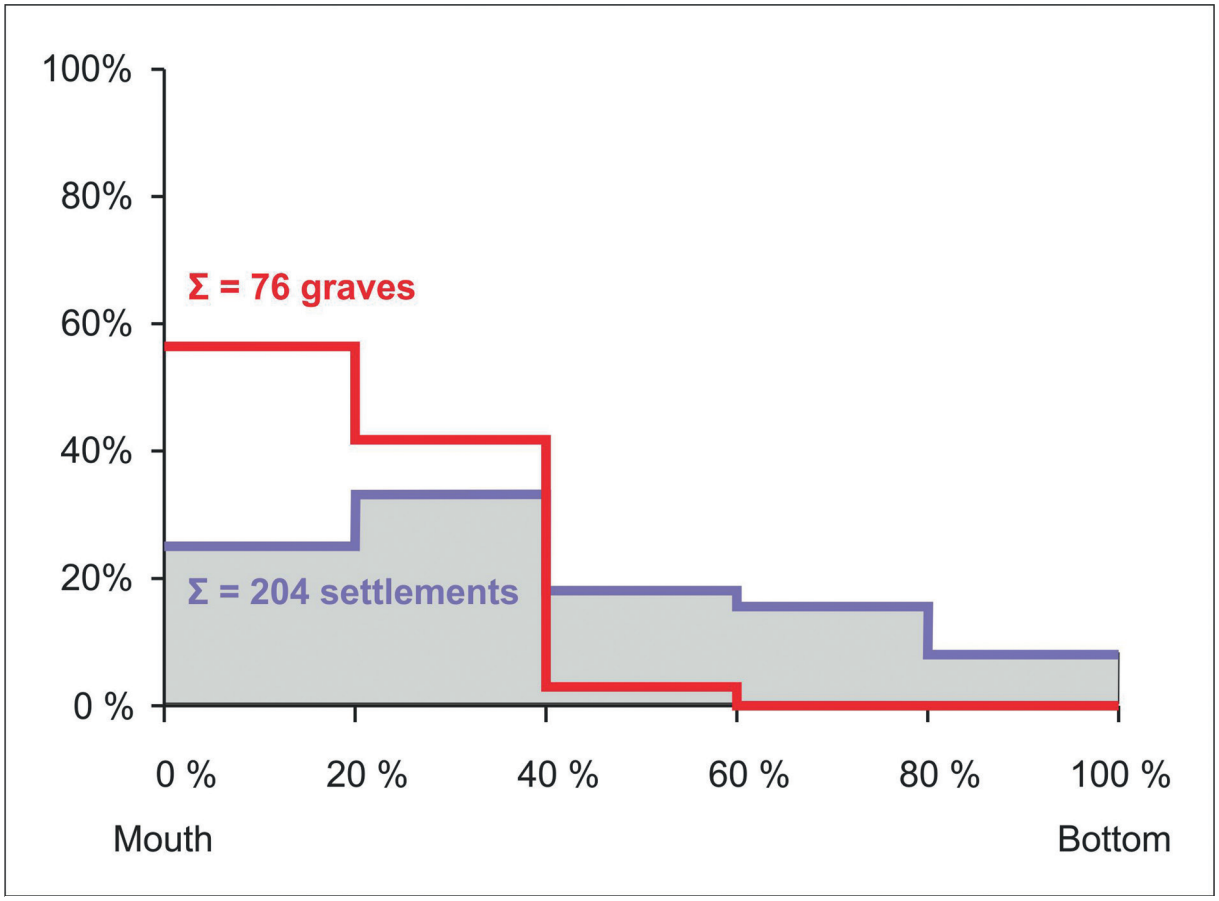

Fig. 5 The relative depths – in 20 % intervals of the depth/length of the actual inlet/fjord/small sound – of Late Mesolithic settlements (blue line) and graves (red line) located in inlets, fjords and small sounds. The settlement data are from the Norsminde/Kysing Fjord, the Saltbæk Vig, the Karrebæk and Dybsø Fjords, The Vedbæk, and the Nivå areas (Andersen, 1991; Brinch Petersen et al., 2015; Johansson, 1999; Lass Jensen, 2016; Price & Gebauer, 2005: 37-61). References to the grave material used are found in the caption of **fig. 4**. The five graves from Koed and the two graves from Ertebølle have not been included in the analysis as they are located on sounds with no indications of obvious water-territories. Graphics by Ole Grøn.

the open sea, thereby giving good conditions for marine or brackish hunting and fishing. From such territorial core areas, it would seem logical to extend the territorial rights out into the open sea too, but this would be difficult to demonstrate archaeologically.

Discussion

Social anthropological information indicates that territoriality, often signalled physically through territorial markers, plays an important role in Evenk and other hunter-gatherer societies. Ritual sites, graves, settlement structures and signs of the use of the landscape by the controlling group also serve as territorial markers, which demonstrate to other groups that this part of the landscape is in use, i.e. that special relations already exist here between the group that uses it and the local spirits (Grøn et al., 2008a; 2008b; Littleton et al., 2013; Schroeder, 2001; Tanner, 2014, 231-261).

It would probably prove productive to reanalyse the numerous archaeologically known *"ritual sites"* from the point of view that they, in addition to their other practical and ritual functions, are also likely to have had a function as territorial markers.

That the two graves at Dragsholm, of which the one is Mesolithic and the other Early Neolithic (Price et al., 2007), are separated by approximately 1000 years could well reflect that the hill they were placed on was well suited for marking the western opening of the fjord-like sound they appear to be related to.

A ritual site from the Late Mesolithic with offerings and human skulls, apparently originally mounted on sticks, found at Kanaljorden, Motala, Sweden, was located in the shallow waters

of a small lake separated by a low ridge from a river, Motala Ström, the only outlet from the extensive Lake Vättern into the Baltic (Hallgren & Fornander, 2016). This could logically have had a function as an important territorial marker, invoking the spirits of important deceased group members as territorial defenders by a central traffic corridor to the lake.

The boat grave at the submerged Møllegabet II site should logically be seen as originally being placed above water, supported by the stakes found around it, in the shallows at the mouth of a large inlet and consequently visible to members of other groups who entered this resource area. The large antler, the bow fragment, etc. found directly around the grave may well have constituted part of its original furnishings. Interestingly, three stones that were apparently stepping stones on the ancient shoreline between two concentrations of, respectively, three and four very thin vertical stakes, appears to have led out to the burial. A collection of quite fresh and unused core axes was found deposited between the stepping stones (Skaarup & Grøn, 2004, 28, 34-40) (**fig.6**). Even if the boat grave was, as originally presumed, placed under water, the two concentrations of stakes could have functioned as supports for visual markers of its position.

An excavation at Sylholm on the island of Lolland, where there is excellent preservation of organic material, has revealed a 25 m^2 concentration of Late Mesolithic and Early Neolithic finds which has the character of a shallow water offering site not far from the contemporaneous coast. The finds included about 50 mandibles of domestic dog, wildcat, otter, fox, red deer, pig and roe deer. Furthermore, there were two antler axes with remains of their shafts in situ, three antler fabrications, 10 unworked antlers (shed and removed), five wooden axe shafts with knob-like thickenings of the handles, 17 tinder fungi, charcoal, burnt twigs and sticks and a few burnt bones and pieces of burnt flint. Sharpened rods and stakes had been hammered in everywhere across

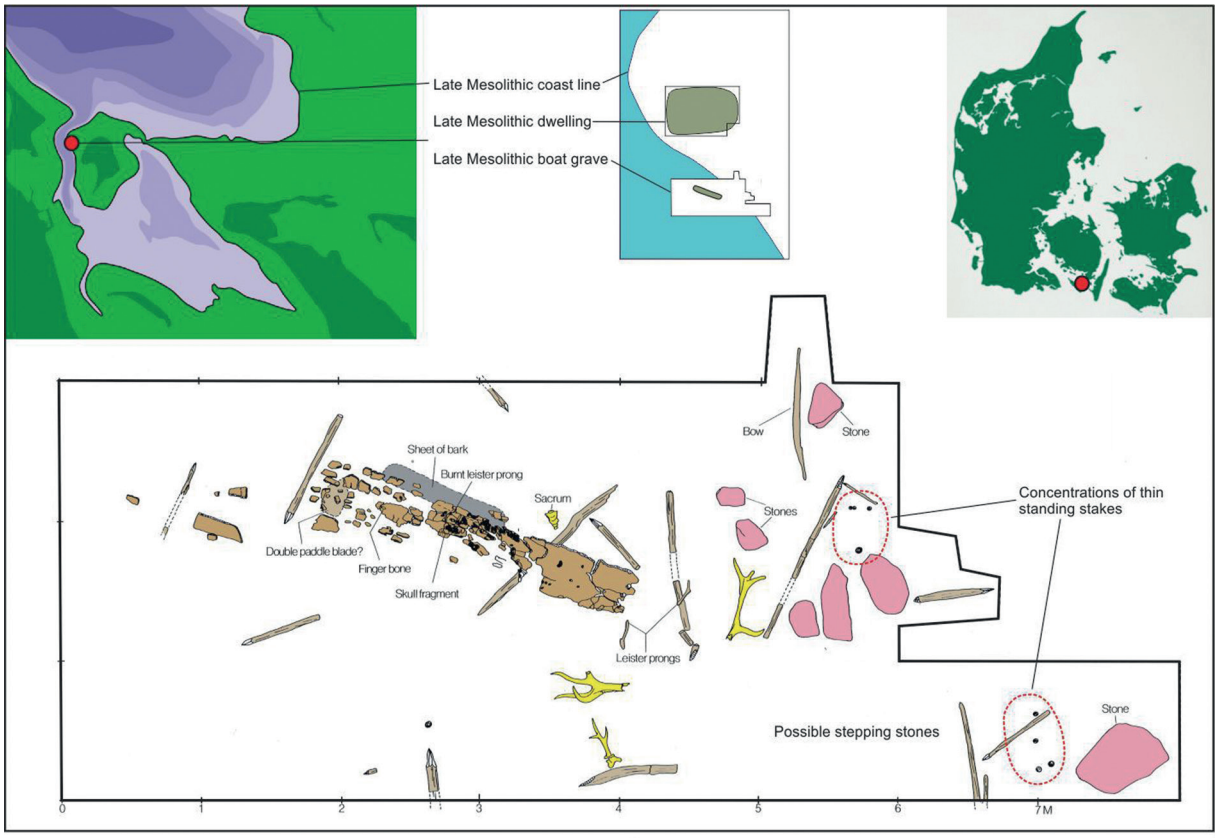

Fig. 6 The Møllegabet II boat grave at the Early Ertebølle level of the coastline at Dejrø, Ærø, Denmark. The boat grave is interpreted as having been supported by some of the 7 stakes found below and immediately around it and therefore visible above the surface of the sea. The presumed stepping stones crossing the ancient shore, the two concentrations of thin vertical stakes (only their bases are preserved), the concentration of fresh and intact core axes, antlers, a small bow (from a bow drill for firemaking?) and a bow fragment may have served as visual territorial markers. Graphics by Ole Grøn.

the 7000 m² excavated area around this concentration of finds, but were especially numerous within it and, in some cases, could have served as mounts for the skulls of dogs, pigs, and red deer recovered there. The topographical position of this concentration of finds is presently difficult to ascertain, but it may have occupied a central access position in an inlet (Sørensen, 2016a; 2016b)

It is also possible that the well-known Neolithic 'bog pots', which were often deposited by the lake shores as part of broader cultic activities should be seen as having had a role as territorial markers in relation to the resources in the lakes (Koch, 1998, 51-55).

In Siberia, small sacred places that also serve as central territorial markers are well known, for instance among the Samoyeds (today the Khanty-Mansi). Nordenskiöld writes the following about such sites (Nordenskiöld, 1881, 91-95) (see **fig. 7**):

Our Russian host informed us the Samoyeds from far distant regions are accustomed to, make pilgrimages to these places in order to offer sacrifices and make vows. They eat the flesh of the animals they sacrifice, the bones are scattered over the sacrificial height and the idols are besmeared with the blood of the sacrificed animal.

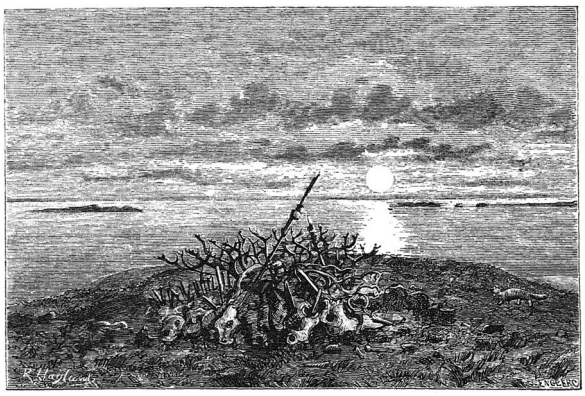

Fig. 7 A Samoyed sacred place on a promotory on Yagats Island (Nordenskiöld, 1881, 91). Such sites also serve as territorial markers.

The importance of territorial markers in the Late Mesolithic Cultural Landscapes

Brinch Petersen has stated that the Late Mesolithic burial grounds should rather be seen as "*persistent places in the landscape*", where groups of people, and not necessarily the same group, lived and buried their dead (Brinch Petersen et al., 2015). According to the analysis published here, an important facet of this statement is, that the dead relatively often appear not to have been buried at/near the settlements where they died, but possibly in relation to settlements they had inhabited or had a relation to, which had a special territorial meaning.

All in all, it seems that an increased focus on territorial markers could facilitate an improved understanding of Late Mesolithic territoriality through a more social anthropologically inspired approach to these phenomena, where they are preserved or can be identified in the archaeological record. It appears likely that many "*cultic sites*" and features could acquire a new and relevant role when also understood as territorial markers. Ignoring spiritual cultural aspects in the interpretation of Mesolithic and other prehistoric hunter-gatherer societies is a bit like only considering the bones in the reconstruction of extinct animals and ignoring all the softer parts of their anatomy such as the muscles, veins, nerves, brain etc. and their dynamic interaction during movement and activity. The outcome is poor, but of course much less challenging to attain than the complete package.

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About the author

Ole Grøn is a researcher & PhD associated to the Department of Geosciences and Natural Resource Management at the University of Copenhagen, Denmark. After a couple of years at the Physics & mathematics line at Aarhus University, he switched to archaeology and specialised in Stone Age landscape archaeology land-based and underwater, hunter-gatherer land-use ethnoarchaeology, as well as remote sensing with a special focus on acoustic techniques for maritime archaeological application. Previously, he has served as a research director of the Department of Landscape and Archaeology at the Norwegian Institute of Cultural Heritage Research (NIKU), Oslo, as a professor at the Institute of Archaeology, UCL, London, and as director of Langelands Museum, Denmark. He has published more than 130 papers and a couple of books, is a reviewer for international journals, councils and foundations and has acted as a national representative of Denmark in the COSCH project (European Cooperation in Science and Technology, Cost Action COST Action TD1201), as well as in the SPLASHCOS project (European Cooperation in Science and Technology, COST Action TD0902).

Declaration of conflicts

This paper is based on re-interpretation of published data and has not received any economical support. It does not reflect any other interest than that of improving our ability to interpret the archaeological data correctly, and should therefore not represent any conflict of interest.

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Supplemental material:

Additionally, the online version of this paper is enriched by two tables with open data.

Table 1 – Relative distances from the settlements to the mouth of the inlets/fjords/fjord-like sounds they were located in – in the Norsminde/Kysing Fjord, the Saltbæk Vig, the Karrebæk and Dybsø Fjords, the Vedbæk, and the Nivå areas – calculated as % of these waterbodies' depths (Andersen, 1991; Brinch Petersen et al., 2015; Johansson, 1999; Lass Jensen, 2016; Price & Gebauer, 2005, 37-61).

Table 2 – Relative distances from the known Danish Late Mesolithic graves located in relation to inlets/fjords/fjord-like-sounds to the mouths of these water bodies, calculated as % of these waterbodies' depths (Albrethsen & Brinch Petersen, 1977; Andersen, 1991; Andersen, 2013; Andersen, 2018, 46-49, 198-200, 229-231; Brinch Petersen, 1990; Brinch Petersen et al., 1979; Brinch Petersen & Meiklejohn, 2003; Brinch Petersen et al., 2015; Hougaard Rasmussen, 1990; Jensen, 2001, 230-232; Kannegaard Nielsen, 1990; Kannegaard Nielsen & Brinch Petersen, 1993; Lass Jensen, 2016; Lund Hansen, 1973; Madsen et al., 1900; Newell et al., 1979, 51-53; Price et al., 2007; Skaarup & Grøn, 2004; Uldum, 2011; Westerby, 1927: 27-30; 'Fund og Fortidsminder', The Danish national archaeological database, place-nrs. 010505-45, 030607-6, 050612-83).