CONTRASTS OF THE NORDIC BRONZE AGE
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Contrasts of the Nordic Bronze Age

*Essays in Honour of Christopher Prescott*

Edited by

Knut Ivar Austvoll, Marianne Hem Eriksen,
Per Ditlef Fredriksen, Lene Melheim,
Lisbeth Prøsch-Danielsen, and Lisbeth Skogstrand

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Preface

The idea of this volume originated at the fourteenth Nordic Bronze Age symposium held in Oslo, 6–10 June 2017. This event marked the fortieth anniversary of the symposium, coinciding with the sixtieth birthday of one of the leading scholars of the European Bronze Age, Professor Christopher Prescott. We therefore dedicate this volume to him. While the title, ‘Contrasts of the Nordic Bronze Age’, was chosen to show the engaging diversity of recent Bronze Age works, it is also a fitting recognition of the work of Christopher Prescott. Prescott’s work reveals a long-term and stout-hearted engagement with the Nordic Bronze Age, but his research is also diverse, appropriately contrasting between the local, regional and interregional.

Prescott’s career started at the University of Bergen, where he quickly showed critical thinking skills, delving into the chronological study of Late Neolithic/Bronze Age flint technology (Prescott 1986). Later, with his doctoral work, he looked at long-term changes in a peripheral region in the inner part of Norway, but also actively connected this region with continent-wide developments (Prescott 1995a). Excavations in the Skrivarhelleren rock shelter from 1987 to 1989 strongly shaped his career path (Prescott 1991), producing, among other things, new insights into the earliest bronze-based metallurgical practices in Scandinavia. In what remains a highly relevant work from 1995, he explored local ethnographies from Sogn, in order to better understand Late Neolithic and Bronze Age pastoralism (Prescott 1995a, 164–66). Then, as in later works, he elegantly combined a historical perspective with cross-cultural comparison — an approach rarely witnessed in Scandinavian archaeology in the 1990s.

Several chapters in the first section of this book: ‘Time and Trajectory in the Nordic Bronze Age’ address the same themes, situating key problems within Bronze Age research over the longue durée. How do social innovations reverberate through time, creating trajectories that shape economic and social worlds? How do groups populating the so-called peripheries interact with the centres of innovation? While these questions have been intrinsic to Prescott’s work from the beginning, they are particularly visible in his research from the twenty-first century.

Seeing the Late Neolithic as a dramatic break with previous traditions and the beginning of a new era — essentially the Bronze Age — Prescott (2017) nonetheless treats historical events and processes on an equal footing. Thus, in this book we have challenged former students and colleagues of Prescott to submit articles that deal with phases of transformation and across traditional time periods and research boundaries, perhaps pushing them outside their comfort zones.

The second section of this book — ‘Ritual and Everyday Life: Ontologies, Images, and Place-Making Practices’ — revisits the ritual practices, images, and ontological transformations of the Bronze Age. This section is indebted to the ritual perspective that specifically grew out of the Scandinavian archaeologies of the 1990s, of which Prescott was an early proponent. Prescott’s initial research on the process of Indo-Europeanization in Scandinavia sprung not only from traditional archaeological data but also from interpretations of rock art images on the west coast of Norway (Prescott and Walderhaug 1995). Also, his seminal work on Bronze Age metallurgy in Sogn framed the evidence in a first and foremost ritual setting, laying the foundations for a ritualized understanding of bronze metalworking (Prescott 2000). At the same time, he continued the tradition of earlier scholars of the Norwegian Bronze Age, Håkon Shetelig (e.g. 1925) and Egil Bakka (e.g. 1976), seeing metallurgy as integral also to Bronze Age societies in more peripheral parts of Scandinavia. Moving from Bergen to the University of Oslo in 1996, Prescott soon engaged in research on Bronze Age metallurgy in a burial context, at Hunn in Østfold. The Hunn excavations (1997–1999) were carried out within the Swedish-Norwegian interdisciplinary project, Rock Carvings in the Borderlands (INTERREG II). This was in the spirit of another strong conviction of his: that rock art should be studied as an integrated aspect of Bronze Age society and not in isolation.

In a similar way, the third section of this book, ‘Encounters: Identity, Things, and People on the Move’, ties in with central themes of Prescott’s research. Throughout his career, Prescott has explored the mobility of people and things; he has focused on the socio-political circumstances of cultural meetings.
as factors strongly shaping the Nordic Neolithic and Bronze Age. Notably, he has also considered mobility as a factor in periods when local development was considered the only adequate explanation of social change. This was expressed in his early works on migration and the introduction of an agro-pastoral based economy (Prescott and Walderhaug 1995, cf. Prescott 2017). Fieldwork in Lista, south-western Norway, further developed his interest in connections across the Skagerrak strait to Jutland. The distinctive aspects of the region, such as an early introduction of an agro-pastoral package, including longhouses, burial mounds, rock art, and the import of metal objects, strongly shaped his perspectives on Late Neolithic and Bronze Age transformations in Northern Europe, even in later works (e.g. Prescott and Glørstad 2011; Prescott 2014; Prescott, Sand-Eriksen, and Austvoll 2018).

The Scandinavian-Sicilian Archaeological Project (1997–2003), with excavations at the fortified Iron Age site at Monte Polizzo in Salemi, Sicily (Prescott and Mühlenbock 2013), provided a young generation of Scandinavian students with new opportunities for collaboration. This multinational project instigated a new era in Bronze Age archaeology, and was later transformed into the EU-financed Emergence of European Communities. The project worked comparatively with several cases across Europe to understand varied forms of social organization. Prescott’s interest in social and political developments has been a recurring theme in his publications (e.g. Prescott 1991; 1995a; 2012a; 2012b). This interest has led to invaluable contributions to Nordic Bronze Age archaeology.

New methods in the natural sciences have recently invigorated the study of the social realm of prehistoric societies. Prescott’s inclination towards the sciences has a long history, coupled with his strong source criticism. His use and critical evaluation of science-driven approaches is highlighted in a seminal work from 1996, ‘Was there really a Neolithic in Norway?’ where he re-evaluates in detail the Neolithic transformation in Norway. The topic of cross-disciplinary collaboration between the sciences and archaeology is again discussed in more recent works where he specifically calls for greater awareness from the humanities (Prescott 2013a). Prescott’s approach of using archaeological science to study social aspects of prehistoric life has resulted in a number of diverse projects; the use of palynology and land-use to study agricultural practices and settlement patterns in the Neolithic and Bronze Age (e.g. Prosch Danielsen, Prescott, and Holst 2018); an interest in geology and minerals as raw materials (Prescott 2006; Melheim and Prescott 2016); work on Bronze Age craft production initially focusing on lithic studies and metallurgy (Prescott 1986; 2006), and evolving more recently to wool and textile production (Prescott and Melheim 2017).

Prescott’s academic engagement stretches far beyond Bronze Age archaeology. Heritage studies is another field where he will surely continue to make an impact (e.g. Prescott 2013b; 2018; 2020); his particular areas of focus are the illegal trade of antiquities and the impact of globalization and changing demographics on heritage narratives. Through his position as Director of the Norwegian Institute in Rome, he has in recent years been able to concentrate on his interest in heritage and continue his work with colleagues in southern Europe. This collaboration and leadership is fundamental to who he is as an academic — to us, the editors, this book is also very much in Prescott’s spirit as a teacher. He is always willing to stand up for his (sometimes) provocative opinions regarding the past and established academic practices, always with a concern for younger colleagues who are inclined towards the same. Above all else, Prescott has encouraged us and drawn us into his centrifugal energy — always critical, always sharing data and knowledge, always aimed at collaboration.

On a final note, we wish to thank everyone at Brepols for their hard work in making this publication a reality; an anonymous peer reviewer for highly detailed and constructive critique; Emily Hanscam for her excellent copyediting; Marianne Moen for her superb proofreading; and most of all, we wish to thank the contributors to this volume for sharing their excellent research with us.
Part I

Time and Trajectory in the Nordic Bronze Age
2. The Nordic Bronze Age Rose from Copper Age Diversity

Contrasts in the Cimbrian Peninsula

Johannes Müller and Helle Vandkilde

Introduction

The Nordic Bronze Age (NBA) had its breakthrough as a unique cultural zone 1600–1500 BCE. At this time, maritime movements from the primary region in southern Scandinavia (Jutland, northernmost Germany, Danish Isles, Scania) inspired new local and regional developments in central Scandinavia (Vandkilde 2014; 2017a; 2017b). Epic mound-building activities subsequently evolved in addition to similarities in other domains such as metalworking, ritual hoarding, animal-prowed longships, and three-ailed longhouses. This adds to the general picture of a shared cultural tradition among those parts of the population who succeeded in preserving memories of themselves for posterity. After the first and second boom of monumental constructions — namely megalithic tombs (3600–3100 BCE) and early Single Grave mounds (2800–2600 BCE) — Bronze Age mound constructions represent a third monumental boom in northern Germany and southern Scandinavia (Brozio and others 2019a; 2019b; Kneisel and others 2019). Regional and local peculiarities notwithstanding, it is hard to ignore the distinctness of Nordic societies during the Bronze Age. It was an imagined community in the wording of Benedict Anderson (1991), glued by imaginary as well as physical ties in a multiscalar network.

This NBA uniformity makes it even more striking that the long transition to the Bronze Age — beginning as early as 2800 BCE (Tables 2.1 and 2.2) — or a long finalization of Neolithic societies as it may also be termed, did not ensue as a uniform development towards social hierarchy, mutual traditions, and metallurgical sophistication. Rather, the NBA was founded on contrasts within its precinct rarely discussed in any detail in archaeology. These contrasts are in part geographical as their combination, entanglement, and development vary over time across particular Nordic regions, but also by the manner in which networks were maintained with the outside world. The present pilot study will pursue contrasts, and the change, disruption, and negotiation of these, while focusing on the Limfjord region and Holstein in the north and the south of the Cimbrian Peninsula respectively (Fig. 2.1). The term ‘Cimbrian Peninsula’ is here used as a collective term comprising Jutland as well as Slesvig-Holstein.

Within the two case studies, we track and refer to the developmental trend from the Younger Neolithic (SGC and contemporaneous phenomena) to the NBA. This involved specifically a break in mound building (2600–1700 BCE) and in the deposition of status objects (2600–2400 BCE) (Müller 2015, 658, fig. 11; Brozio and others 2019a; 2019b). While the
middle of the Younger Neolithic c. 2600 BCE appears as a period of transition with reduced mound building and axe depositions, the Late Neolithic especially from c. 2000 BCE lays the foundations of the pending NBA by the new boom in the deposition of prestigious metal objects.

Contrasts, Memory, and Change

We use contrasts as synonymous with diversities, arguing that ubiquitous material contrasts in our regions reflect divergent ways of memorizing the past, in order to cope with the complexity of the present and thereby to protect the future in some sense. Contrasts over time and geographical space are therefore deeply entrenched in deviant, albeit variably interlocked, societal modes operating within particular geographies. Contrasts also describe the manifold identities, individuals, and social groups behind the prehistory of the studied region.

It is clear from anthropological studies that material culture functions well as an aide mémoire in keeping track of the past (e.g. Bloch 1996; 1998), and in pay-

Figure 2.1. Denmark and northern Germany with the two regional studies. Background charting of burial mounds mainly dating to the early NBA 1600–1100 BCE (based on public resource data, Archaeological IT AU).
ing respect to cultural tradition including the continued presence of still-powerful ancestors (Mauss 1990, 14–17). Veneration of the past, for example through the construction of highly visible monuments, nevertheless is political as it promotes or reconciles social tradition and innovation in an often interwoven manner. The classic example is how a new rulership safeguards its future by reinventing tradition (Hobsbawm 1983; see also Otto and Pedersen 2005), while claiming genealogical ties with long-gone ancestral groups by commemorating them (Whitley 1995). A broader societal stratum can similarly respond more collectively to severe internal threats, crises, or exogenous pressures. Such strategic endeavours may create the social space necessary for introducing and implementing exogenous forms of cultural capital that are crucial for maintaining or rejuvenating relations of power (Otto 1991; Vandkilde 2008; 2019). Anthropological and historical scenarios like these often seem to characterize phases of rapid societal transformation (e.g. Trevor-Roper 1983). Rising elites often blend ancient traditions with new additions in order to maintain their authority in a rural society bound by tradition. Such mechanisms also played a role in prehistory during phases of transformation when social compromise and authority needed a conspicuous manifestation — as revealed in such assemblages of grandeur as the Unetician giant mounds, for instance the Leubingen tomb (Müller 2002).

Background and Overview: Rethinking the Beginnings of the Nordic Bronze Age

The long transitional period in question can be divided into seven periods of varied length (cf. Vandkilde 1996; Hübner 2005; Müller 2015), as shown in Table 2.2.

Table 2.2. Chronology of the long transitional period to the Nordic Bronze Age. Younger Neolithic 1–3 and Late Neolithic I may very broadly merit the term Copper Age (Chalcolithic). The Bronze Age sets out at the beginning of Late Neolithic II around 2000 BCE in step with the rest of Afro-Eurasia (Vandkilde 2017a; 2017b). The Nordic Bronze Age appeared in characteristic outline 1600–1500 BCE in NBA IB.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Younger Neolithic 1</td>
<td>2850–2600 BCE</td>
</tr>
<tr>
<td>Younger Neolithic 2</td>
<td>2600–2450 BCE</td>
</tr>
<tr>
<td>Younger Neolithic 3</td>
<td>2450–2250 BCE</td>
</tr>
<tr>
<td>Late Neolithic I</td>
<td>2350–2000 BCE</td>
</tr>
<tr>
<td>Late Neolithic II</td>
<td>2000–1700 BCE</td>
</tr>
<tr>
<td>NBA IA</td>
<td>1700–1600 BCE</td>
</tr>
<tr>
<td>NBA IB</td>
<td>1600–1500 BCE</td>
</tr>
</tbody>
</table>

Metals and metallurgy were at the centre of technological and social change over the long term. Metal objects were not extensively in use during the Younger Neolithic. By Late Neolithic I (LN I), gold and copper items appear more frequently in the archaeological record, including some metallurgical knowledge connected in particular to Bell Beaker communities with flint daggers of lancet shape as skeuomorphic in-betweens. Becoming producers and users of metals was hardly of great social consequence until c. 2000 BCE in the Late Neolithic II (LN II), when the first boom occurred in both of these variables. This happened most profoundly at 1600 BCE in the NBA IB, when the NBA had its first breakthrough on a number of fronts. This three-stage development is contingent on the networked reality of the wider Bronze Age world increasingly dependent on bronze from 2000 BCE onwards (Vandkilde 2014; 2017a; 2017b). The production rate of metal objects and the increase of the average tin ratio in bronze are correlated (Müller 2015, 656; fig. 7), thus the boom in metal depositions beginning 1700–1600 BCE in Europe depended on the new technological knowledge of alloying.

In the first half of the studied timespan, genetic science adds a further variable to understanding and interpreting cultural change despite the relatively poor preservation of bone in the southern parts of Scandinavia and northern Germany diminishing opportunities for extracting ancient DNA. Currently available genetic data nonetheless aligns with wider European data indicating that the various CWC peoples descended from herder communities of the Eurasian Steppe Zone (e.g. Allentoft and others 2015). The long-debated Single Grave Culture (SGC) and its Swedish Battle-Axe or Boat-Axe equivalent (BAC) (Glob 1945; Malmer 1975; 2002), both part of the Corded Ware complex, can now likewise be understood partly in terms of in-migrations. This interpretation is strongly supported by a recent research paper, which is suggestive of admixture events bringing together CWC newcomers and local farmers in southern and central Sweden (Malmström and others 2019). Such biocultural meetings tally with conclusions reached by several recent papers concerned with central Europe (Allentoft and others 2015; Haak and others 2015; Mittnik and others 2019), in addition to Southern Scandinavia (Malmström and others 2015). The scale of immigration and the size of the groups migrating into Scandinavia still require more research along with studies of pre-existing demographic densities in the landscapes the newcomers settled.

However, we can envisage that separation as well as integration processes formed new identi-
ties (cf. Mittnik and others 2019). These new identities were linked to supra-regional networks of ideas and people; they must have been bioculturally quite diverse depending on the role that SGC, Globular Amphorae and Store Valby Funnel-beaker culture (FBC) groups played within the network hubs during the Younger Neolithic. The land first acquired by these migrants and acculturated farmers was in the main sparsely populated, as demonstrated by the evidence from western Jutland and western Holstein. In these areas, the new venture resulted in new cultural landscapes formed by built burial mounds, while in more densely populated areas new symbols of power, such as stone battle-axes, were mainly deposited without any visible marking (eastern in contrast to western Holstein). The socio-cultural setup of the newcomers may well have been framed by a segmentary lineage organization; small settlements of individual households and modest mound cemeteries spread sparsely across the landscape, characterized by a mixed economy of husbandry with additional small-scale agriculture and high human mobility (Müller and others 2009; Sjögren, Price, and Kristiansen 2016).

The situation is less clear in northern and eastern Jutland, in eastern Holstein, and on the Danish Isles. The so-called ‘East Danish Single-Grave Culture’ resided here (Becker 1936), but the archaeology does not fit this categorization in suggestion of a Corded Ware affiliation (Iversen 2015; 2016). Rather, archaeological data favours a robust continuation of Funnel-beaker societies. These FBC farmers strengthened their tradition albeit with selective appropriation of exogenous material culture. Battle-axes and cord-decorated beakers appear sporadically within the collective frame of a megalithic culture, and the new items are used, semiotically speaking, in the old FBC-grammar within rituals and daily practices (cf. Iversen 2015).

Genetically, Funnel-beaker culture seems closely related to local forager societies as well as to Central European pre-Corded Ware farmer populations, the so-called First Farmers of Middle Eastern ancestry (Malmström and others 2015; Lipson and others 2017; Brandt 2017, 183). At the transition to the Younger Neolithic I, however, influences of Globular Amphorae (GA), and incipient SGC networks and settlers, are discernible not only in the south and west of the Cimbrian Peninsula, but also towards the north and the east, hence disrupting the more or less unicultural situation of FBC dwellings on the land (cf. Wóidich 2014). In addition, Pitted Ware hunter-farmers (PWC) resided along the northern coasts (cf. Becker 1950; Iversen 2013), contributing to a cultural amalgamation of different identities and economies. In fact, mitochondrial DNA suggests that at least some of these PWC foragers were descendants of Mesolithic hunter-gatherers in the region (Malmström and others 2015). In the southern part of the Cimbrian Peninsula, dwellings belonging to late FBC of the Store Valby variety and new burial practices relating to GA and SGC altogether confirm a multicultural phase of transition (Johannsen and Laursen 2010; Brozio 2016; Dibbern 2016; Brozio and others 2019b).

Concerning the subsequent period 2500–2000 BCE with the Bell Beaker Culture (BBC), there is currently no genetic evidence for population movement from Iberia to central and north-west Europe (Olalde and others 2018 contra Brandt 2017, 187–88). Genetic studies instead corroborate that the central and north-west European Bell Beaker Culture (BBC) derived from admixtures of populations of Steppe ancestry and the original Neolithic farmers of Europe that happened in Central Europe already with the Corded Ware phenomenon (CWC) (Massy and others 2017; Olalde and others 2018; Mittnik and others 2019; cf. Olalde and others 2019). Isotope studies demonstrate a high level of mobility, in particular among BBC females (e.g. Price and others 2004; Massy and others 2017; Knipper and others 2017; Frei and others 2019).

This lends a new perspective to the marked presence of Bell Beaker material culture in the western part of southern Scandinavia, as far as Norway beyond the deep waters of the Skagerrak strait (Vandkilde 1996; 2007a; Sarauw 2007a; 2007b; Østmo 2012; Prescott 2012; 2017; Prescott and Glørstad 2017). This wide dispersal is difficult to comprehend unless local strategies of cultural mobilization (e.g. reinvention of tradition) took place in conjunction with the reported high mobility of humans who possessed new knowledge and access to supra-regional networks.

In the Nordic region, early Bell Beaker settlements occur along Jutland’s North Sea rim and most particularly in the Limfjord region, which rapidly developed into a BBC hotspot with local cultural and economic variance thriving on rich sources of flint. At some point this evoked trading links or settlement expansions into new territories, including the heartland of central Jutland (e.g. Sarauw 2007a, 67, fig. 2; 2007b, 29, fig. 18). In the latter area, a portion of BBC remains, including cereal finds, have been dated very late (1800–1700 BCE; cf. Møbjerg, Jensen, and Mikkelsen 2007, 17; Borup 2018) and may therefore support the claim of a late expansion from the Limfjord hotspot region. The prolonged process of spread promoted inclusion of BBC artefacts into local practices. By comparison and bearing some resemblance to the situation in the Younger...
Neolithic, Funen, Sealand and Scania are BBC-free despite the full adoption of pressure-flaked lanceolate flint daggers, reminiscent of tanged copper versions (Vandkilde 2007a). Instead, the data shows a strong continuation of megalithic culture (Vandkilde 2007b).

A situation similar to the one described for the Limfjord region may well apply for the south-west part of the Cimbrian Peninsula along with the adjoining North Frisian Islands and the Elbe-Weser triangle towards the south. Here, Bell Beaker artefacts likewise occur primarily on domestic sites. Overridingly, a maritime-led BBC network attached to coastal sites can be tracked from the Dutch region to the Limfjord area and from there to southern Norway. There are even links to the Elbe BBC of central Germany (Hinrichsen 2006, 261, map 53; Kleijne 2019; Kleijne and others). The south Cimbrian Baltic coastlands, and east Holstein in general, display a BBC-free situation (Schultrich 2018a, 44) similar to the one described above for Funen, Sealand and Scania.

Overall, the peoples of the Corded Ware and Bell Beaker cultures were inherently expansive and mobile, as short- and long-distance transfers of both people and artefacts into the areas of other social groups demonstrates. This may have come with a price for the local people: the individuals who maintained the supra-regional network or who moved into foreign regions might have carried and spread epidemic disease — notably plague (Andrades Valtueña and others 2017; Olalde 2018). In fact, this fits with the segmentary lineage organization designated by Sahlin (1961) as expansive and even predatory. Otherwise, social practices of sharing recently emphasized in ethnographical research, might also have contributed to the observed distribution patterns (Widlok 2017). On this basis, we suggest that northern Germany and southern Scandinavia saw a combination of translocation, inward migration, acculturation, and segregation in several phases. There were also various cultural responses in the wake of this change, through the activation of a string of cultural resources already referred to above. From a Central European perspective, the individuality and the differences between such ‘waves of change’ are obvious, for example, between the male oriented early CWC traits and the gender balanced early BBC phenomenon (Vandkilde 2007a, 87–89).

**Statements in Stone or Turf**

The persistent presence of monumental graves represent the past for the present, thereby ensuring that the cultural strategies and identities of social groups carry consequences for the future. Monumentalities already in existence cannot easily be removed, as they are reminders of the deep or recent past and may be useful in the here and now. They stand as highly visible statements prompting interpretation and memory, as well as action, by all social groups inhabiting the landscape. Monuments work well as markers for identification with potential to visualize or hide the friction, or even disruption, between tradition and innovation or the indigenous and exogenous, hence also between and within different social groups negotiating their rights to the land and other resources.

In light of the amalgamation of Copper Age populations described above (cf. Table 2.2), two types of monumentality form the focus of the regional discussion in this chapter: megalithic tombs and earthen burial mounds (cf. Müller 2019). On the one hand, monumental stone graves and turf-built mounds stand side by side in the landscape, in a relationship of rivalry where either represents a minority or a majority. Each type is reused for burial over long periods in a manifestation of roots, belonging, and tradition. On the other hand, the two forms of monuments undergo intriguing conceptual and formal redefinitions at certain points in time. Despite issues of dating, we suggest that such reinventions of tradition, also visible in other kinds of material culture, reflect periods of social friction and change when individual or collective strategies called upon the past in an effort to transmit their social claims to the future.

**The Limfjord Region Case Study: Contrasts, Commemoration, and Change**

During the long transition to the Bronze Age, the Limfjord region in the northern part of the Cimbrian Peninsula looked entirely different than today. It was an archipelago of numerous peninsulas and islands of various sizes. Connectivity required water-borne transport to a much higher degree than today, and the region differed markedly from the often flat and unbroken landscape towards the south in Jutland. Speaking in general terms, these two landscapes invited different modes of economic production, one based on herding-farming in the south and another in the north based on a mixed economy of agriculture, husbandry, fishing, and foraging. Despite these environmental differences, settlements consisted of single farmsteads in both these landscapes as well as elsewhere in Scandinavia with few exceptions.

In the Limfjord region, single farms consisting of one or two affiliated longhouses were the predominant mode of habitation; there was a generational movement of house and household across a given
The characteristic sunken-floor, two-ailed longhouse originated, by all accounts, in the FBC (Artursson and others 2003; Müller 2013); it did not fall out of use as the household residence until around 1500 BCE throughout Jutland (Simonsen 2017, 37, 26, fig. 1.1). This uniformity in dwelling culture in Jutland is likely to have been shaped by a long-term trend towards the recognition of common cultural roots. However, at some point during the first period of the NBA, in the Limfjord region and throughout Jutland, settlements were abandoned or rebuilt with three-ailed, ground floor longhouses standing tall and prominent in the landscape together with the first large mounds (cf. Fig. 2.1). The reasons for this are far from clear, but the concurrence of this shift with the implementation of changes indicative of the shift to the Bronze Age across the board of culture, economy, and society is highly significant.

During the Younger Neolithic 1 (2850–2600 BCE) the FBC of the late Store Valby phase resided firmly
The Nordic Bronze Age rose from Copper Age diversity in the Limfjord landscape (cf. Hübner 2005; Iversen 2016; Simonsen 2017) as evident from settlements, causewayed enclosures, and continued use of the passage graves as the collective frame of burial, veneration of the dead, and incorporation into the realm of ancestors. In general, the culture emphasized the continuation of deep traditions over centuries. However, along the south-western fringe of the Limfjord region at the border to western Jutland, small groups of SGC mounds with gender-specific individual burials now provided a ground-breaking contrast to the FBC megalithic monuments which signified communal values (Fig. 2.2). These mounds form a materially distinct boundary between two forms of commemorating the past, with different economies, societies, and ways of inhabiting the landscape.

In the Younger Neolithic 2–3, after 2600 BCE (late Ground-Grave period and Upper-Grave period), the SGC expands in all directions to cover vast parts of the Cimbrian Peninsula. In the Limfjord region, this second expanse of the SGC affected almost the entire landscape (Fig. 2.3). Monumentality reflects
A remarkable response to the new situation, which might indicate disruption in some small regions, while negotiations of ownership to ancestral land seem ongoing in other small regions. In the land between Nissum Fjord and Nissum Bredning, on the Salling Peninsula, and in minor enclaves in Himmerland, SGC mounds are widespread and could demonstrate a resolved situation benefiting the SGC intruders. In Himmerland especially, however, the political situation seems complex and under negotiation. One sign of this is the new so-called massive SGC interments in passage graves. Another sign is SGC interments occurring prominently (Lomborg 1973, 127–29; Hübner 2005; Fig. 2.3). These redesigned statements in stone may be understood as a reinvention of the SGC.

Figure 2.4. BBC distribution in Jutland during LN I (2350–2000 BC). Note also how BBC is attracted to areas rich in flint (data from Vandkilde 1996, fig. 289, 2007; Sarauw 2007b, fig. 18).
old megalithic tradition of passage graves. This would involve the construction of genealogical ties to common ancestors and may be understood as an attempt to establish a social space for solving disputes and differences — it may have been a first step towards tribal reconstruction. The mishmash of old and new ways in the Limfjord region is in accord with the aDNA results referred to above, stating that central and north-west European BBC derived from mixtures of CWC and the original Neolithic farmers of Europe (e.g. Olalde and others 2018; Mittnik and others 2019), which already took place within the CWC period. However, cultural strategies and other potential factors, such as warfare and pathogenic disease (enabled by high mobility), remain hidden. This is also the period when Bell Beaker decorative elements (AOO and Maritime) began to appear on SGC pottery of late Ground-Grave period and Upper-Grave period types, 2600–2350 BCE, corresponding to Hübner’s phases 2ab–3a (cf. Hübner 2005, 505–06, fig. 496).

During the Late Neolithic I, 2350–2000 BCE, the Bell Beaker Culture is flourishing across the Limfjord region (Fig. 2.4). A Jutland-specific version of Bell Beaker pottery is quite frequent in the period’s sunken-floor longhouses, together with BBC-affiliated tools and weapons (e.g. Simonsen 2017). Prestigious lanceolate long-daggers, produced from the exploitation of local high-quality flint on a near-industrial scale, are deposited in special burials together with pressure-flaked arrowheads. This is in tune with the BBC concept of the dagger-carrying archer, who represents a change from the typical Corded Ware battle-axe wielding warrior (cf. Sarauw 2007a; Vandkilde 2007a, 2007b). There is some limited use of metals (gold sheet ornaments and copper axes), which tend to cluster precisely in the BBC stronghold of the Limfjord region (Vandkilde 1996, fig. 184; 2007a). This is the period when BBC settlements expanded towards the north and south, with flint daggers being produced in large numbers for widespread exchange (Sarauw 2007b).

The unusual combination of different modes of burial interment and monumentality began in the preceding period and continued largely unaltered into the Late Neolithic period (Figs. 2.3 and 2.5); flint daggers were commonly deposited as personal items in the uppermost graves of SGC mounds as well as in the communal space of various forms of stone tombs (Lomborg 1973; Vandkilde 2007a). These contrasts are still present in the organization of the landscape and must have had an impact on the social groups inhabiting it. We argue, therefore, that the BBC formation and expansion should be interpreted in terms of a continued process of identification, and perhaps, tribal construction. It seems that different pasts and origins were acknowledged and commemorated through the array of burial architecture, whilst on the level of everyday life the Bell Beaker material culture of the Limfjord mediated local-level communality as well as cross-links to other BBC communities near and far.

In LN II and NBAIA–B, c. 2000–1500 BCE, the Limfjord region was left outside the mainstream of events with only modest amounts of metal and
Figure 2.6. Dispersal and growth in metal use from 2350–1500 BCE in Scandinavia (after Vandkilde 2017b, figs. 97–100). Trends towards orange colouring indicate growth in metal use and metallurgical practices.
very few of the gallery graves, which are so prominent elsewhere (Figs 2.6–2.7).

Gallery graves were built from 2100–2000 BCE during the first metal rush in an interlocked thrust involving especially coastlands (Vandkilde 2017b; 2019). On the Danish Isles and in Scania, a culturally integrated metal-based culture developed driven by connections across the Baltic Sea, first with the Únětice zone, and from 1700–1500 BCE onwards with the Carpathian Basin and the Middle Danube region in east-central Europe (Vandkilde 2014; 2017b). Expansionist behaviour was still innate, but the game-changing metal enterprise fuelled a long-term level of cultural unity across tracts of Scandinavia and northern Germany.

In the eastern part of southern Scandinavia, communal ancestral traditions and values were still quite strong throughout the Late Neolithic and the earliest Bronze Age but came increasingly under pressure by the individuality and inequality that the metal rush invoked. The large gallery graves represented a compromise between old and new, a true reinvented tradition during times of change; these impressive statements in stone were built in large numbers, often facing the sea, and in the same regions that provided and produced objects made from British and Central European copper ore (Nørgaard, Pernicka, and Vandkilde 2019).

Conversely, the absence of metal hoards in the Limfjord region and the infrequency of metal objects in the archaeological record together suggest that metallurgy was not practiced to any noteworthy extent this early in northern Jutland (Vandkilde 2017b, fig. 91). Metal objects, such as the attractive flanged axes, were instead imported from the outside. A true metallurgy was probably not practiced until c. 1500 BCE, at which point local metalworking is well attested at sites such as the sunken-floor house at Kluborg II in Salling (Simonsen 2017, 272–75). This does not mean that the Limfjord region was entirely outside the rhythms of history — for example, amber was collected and traded, and valuable bronze axes of British origin with a high-tin content passed through the Limfjord region on their way to the metal-working hubs further east (Vandkilde 2017b, fig. 85; Simonsen 2017).

By the NBA II, from 1500 BCE onwards, the tide turned once again in the Limfjord region. The large-scale mound-building scheme produced cultural uniformity across the NBA zones, which occurred together with the full implementation of bronze technology and a number of parallel innovations (cf. Fig. 2.1). The numerous large mounds in lines or groups (Holst and Rasmussen 2015) now densely covering the Limfjord landscape can be conceptualized as a reinvention of the SGC mound tradition, subscribing to beliefs in a distant origin both imagined and rooted in real-world events. Indeed, earlier mounds are sometimes the point of departure for erecting a new and larger mound (e.g. Holst and Rasmussen 2015). Moreover, demographic growth must have been considerable (Müller 2017, fig. 8.5). This is a socio-political aggrandizement of proportions imbedded in an immense spatial expansion. This might well indicate some form of new rulership in need of suitable ancestors for commemoration,
while drawing on the expansive and work-intensive mobilizing force of a segmentary lineage.

The Holstein Case Study: Contrasts, Commemoration, and Change

While the Limfjord region displays spatial similarities and differences through time, as well as variation between the eastern and western parts of the landscape, the archaeological record of eastern and western Holstein of the southern part of the Cimbrian Peninsula reveals many similarities along with crucial differences. This is likely due to fundamental environmental differences, which influence the role that these two cultural landscapes played in networks and during periods of increased mobility and expansion. While the Limfjord area is characterized by an east-west waterway communication route (the Limfjord), such a natural communication route is lacking in Holstein. Even though the Eider-Schlei route at the northern boundary of Holstein marks the smallest distance between the North Sea and the Baltic Sea, the contrast between the older moraine areas in the west and the younger moraine areas to the east pose environmental differences. This contrast is further augmented by high precipitation rates in the western Atlantic, while eastern Holstein belongs to the driest areas of Northern Germany. Thus, conditions for subsistence economies vary significantly, promoting agriculture in the clay-based soils of the drier east, and alternative strategies, such as mobile husbandry and extensive forms of agriculture, in the wetter and more sandy soils in the west. This difference was recently readdressed in a diachronic study on land opening processes and the distribution of monuments (Feese and Furholt 2014).

Sweeping transformations displaying different local and regional patterns are visible in the archaeological and palaeoenvironmental remains of the third millennium BCE in the South Cimbrian peninsula. The appearance of artefacts and ritual practices likely associated with Corded Ware assemblages is significant; the earliest A-hammer axes and A-beakers occur in burials only in the western part of the Cimbrian Peninsula, while they are absent in the eastern part (Schultrich 2018b, 85, fig. 16). This is in accordance with the fact that on the Danish Isles and the eastern Cimbrian areas, early SGC burials are very rare, while early burial mounds appear in the western areas during the same period. This marked dissimilarity is further visualized in the different development of eastern and western Holstein.

Western Holstein

This landscape is formed by the clayey and sandy soils of Dithmarschen and neighbouring counties. From the late Earlier Neolithic, a few domestic sites, various megalithic mounds, single flat graves, and one causewayed enclosure are known (Dibbern 2016, 153–67). The location of the causewayed enclosure, at the centre of several former peninsulas and trackways that were marked by megalithic tombs, indicates a Neolithic communication system which linked small communities for centuries (Dibbern 2016, 167–70). Around 2800 BCE, this system of communication did not vanish, but new types of artefacts and burial mounds changed the ritual landscape with depictions augmenting the rites de passage:

- The first Single Grave burial mounds were built (Dibbern 2016, 170).
- The enclosure of Albersdorf-Dieksknöll was still in use for ritual activities, as observable in the latest re-cuttings and infilling of the enclosure ditch system at 2400 BCE (Dibbern 2016, 151).
- The SGC individual burials in megalithic tombs demonstrate continued site biographies of Middle Neolithic (MN) monuments. These burials were not associated with a ‘clearing’ of the tomb chambers — rather the MN assemblages within the chambers were respected (Kühn 1979).

Thus, both within the enclosures as well as inside the megaliths there is continuation of commemorative places, in addition to the novelty of the mound with an individual burial. The change from the late FBC to the Single Grave culture is marked by the new artefactual inventories of symbolically charged hammer-axes and beakers. Megalithic tombs were, however, reused in the same manner as they had been during the late FBC phase from 3100 BCE (the latest date for the construction of tombs). The transformation involving SGC elements in western Holstein appears as a long-term process, which also implies some form of negotiation with existing FBC traditions. This should not conceal the fact that the construction of mounds with individualized and distinctly gendered interments constitutes a true societal threshold: the advent of the Younger Neolithic.

Archaeologically, and likely for the communities inhabiting the region, a more profound transformation can be observed around 2400/2300 BCE. The Dieksknöll enclosure was abandoned when new artefacts appeared — pressure-flaked flint sickles and
daggers are the insignia of a new period. The profound change is indicated by:

- The intensified reuse of megalithic tombs, this time by clearing the original chamber interments without respecting the MN remains (Kühn 1979; Dibbern 2016).
- The appearance of individual flat graves and new burial mounds with individual burials (Dibbern 2016).

While the earlier communication routes were still in existence, the introduction of Bell Beakers on the Western Isles and the coastal areas signifies a new coastal route, which was previously little used. While in Denmark most of the early metal finds are associated with Bell Beakers, this is not clearly the case on the southern Cimbrian Peninsula. Most early metal finds derive from the eastern part of Schleswig-Holstein and appear later (LN II), while linking with emerging metal hubs in central and eastern Denmark and Scania in addition to the Únětice culture from 2100–2000 BCE. There is a chronological difference in the possession of metal objects between western Holstein (from 1700 BCE, NBA IA or NBA IB, onwards) and eastern Holstein (from 2000 BCE, LN II, onwards). For the BBC/LN I period, Holstein has no metal objects and as such differs from the situation in central and northern Jutland.

**Eastern Holstein**

The character and rate of change in the eastern part of Holstein is different from western Holstein with respect to the transformations around 2800 BCE and again at 2400/2300 BCE. During the Earlier and early Middle Neolithic, the use of an enclosure, the construction of megalithic tombs until c. 3100 BCE, and the appearance of the first villages and hamlets characterized the economic and ritual landscape (Steffens 2009; Brozio 2016). This situation is broadly comparable to western Holstein. However, in contrast to the west, eastern Holstein can be characterized by the following:

- Globular Amphorae (after 3100 BCE) as well as Store Valby ceramics (after 2900 BCE) are found in megalithic tombs, hoards, and domestic sites (Brozio 2016, 192–95).
- The causewayed enclosure ceased before 2800 BCE (Steffens 2009, 82–88).
- Early SGC axes are deposited deliberately fragmented, and in many cases as single depositions (single finds) (Schultrich 2018b, 159–62).

- No early Single Grave burial mounds are documented (Schultrich 2018b, 215, fig. 61).
- The reuse of megalithic tombs occurred only from 2500 BCE onwards (Hübner 2005, 468).

The data therefore opens a different avenue for the interpretation of the transformation processes occurring in this region.

As early as c. 3100 BCE, both the construction of megaliths as well as the use of the enclosure at Rastorf came to an end (Müller 2019). Shortly thereafter, the ritual infilling of wells at the domestic site of Oldenburg-Dannau might indicate a further launching phase (Brozio and others 2014). Within the thirty-first century BCE, the megalithic mound at Wangels LA 77 was extended to an elongated shape to enclose an individual stone heap burial (Brozio 2016, 155–62). This is the period when Globular Amphorae pots appeared, with an obvious connection to central Germany with its densely populated loess areas. Furthermore, Store Valby ceramics and domestic sites are known from 2900 BCE onwards at the latest, while early SGC is primarily known from single finds of axes (Hirsch 2001; Schultrich 2018b). Between the thirty-first and the twenty-ninth centuries BCE, burial practices also changed. Stone heap flat graves are known from a domestic site and human bone scatters in the waste area of Wangels (Brozio 2016, 100–02). It is clear that both the ritual filling of the wells and the changing *rite de passage* signify a new time of disruption. Interestingly, SGC artefacts are nearly only known in the Younger Neolithic I from domestic sites and as axes from single finds, but not from megalithic tombs or flat graves (Schultrich 2018b, 215).

The reuse of megalithic tombs began around 2450 BCE, in what is also known as Hübner’s phase 3a (Hübner 2005, 659), a few generations prior to the boom of pressure-flaked flint daggers and sickles. At the same time, depositions of axes and other objects decreased (Müller 2015, 658–59, figs. 11–13). No metal finds from the Younger Neolithic have been found in Slesvig Holstein — this maintains a tradition of the non-presence of metal finds from 3300 BCE, with very few possible exceptions. With the onset of LN II, 2100–2000 BCE, metal finds begin to appear mainly as low-flanged axes of Gallemose type (undecorated), but primarily from the eastern parts of the studied region, especially in eastern Holstein (Schultrich 2018a, 32, fig. 3; cf. Vandkilde 2017b). Concurrently, imports from the Únětice region emerged in Eastern Holstein as well as in central-eastern southern Scandinavia; the deposition of the halberd of Únětice type exemplifies this shift.
Figure 2.8. Slesvig-Holstein. Accumulation rates of barrow constructions and status objects show the decrease of monumentality around 2600 BCE at the latest, and the increase in deposition rates of status objects after 2400/2300 BCE. Most of the barrow constructions before 2600 BCE belong to the western areas of Slesvig-Holstein (Müller 2015, 659, fig. 13).

Figure 2.9. Slesvig-Holstein. Accumulation rates of flint daggers, stone axes, and metal objects. The introduction of metal objects seems to take place at a time when fewer burial mounds were erected than in earlier periods (Müller 2015, 659, fig. 13).
Thus, especially in eastern Holstein, the increase in metal artefacts is represented by a boom-like trend around 2000–1900 BCE and much more profoundly at 1600–1500 BCE, when the NBA emerged as a cultural zone in its own right. Depositions of early metal objects followed a pattern similar to Mecklenburg-Vorpommern, as well as to the Danish Isles and Scania. The impact of the central German Unětice innovation centres changed the Late Neolithic communities around the Baltic Sea in a way that paved the way to full metal economies, this time not only sea-driven, but also land-based. Intriguingly, this happened nearly without Bell Beaker interference, just like in central and eastern southern Scandinavia. This is what denotes the key difference of eastern Holstein to western Holstein, and even to central Germany.

The introduction of metal economies in western and eastern Holstein followed diverse and opposite paths. While in the west, the second boom of monumentality in southern Scandinavia and northern Germany — with early SGC mounds around 2800–2600 BCE — marked a continuous but ideologically changing world, while in the east no further mound building took place from 3100 to 1800 BCE (Fig. 2.8). While the spatial and qualitative differences between the regions in acceptance or non-acceptance are due to local social practices, the general trend of booms and busts in respect to mound building, deposition of status objects, and the increase in metal depositions (since the Late Neolithic) are affected by wider, ‘global’ practices such as the Corded Ware and Bell Beaker phenomena. Obviously, following periods of change the adoption of metal gained a momentum that allowed no point of return — the Bronze Age brought significant changes even to remote areas (Kneisel and others 2019). While eastern Holstein was already using metal around 2000 BCE, western Holstein stayed metal-free until c. 1700 BCE. The Nordic Bronze Age IB, c. 1600–1500 BCE, represents the clearest threshold (Fig. 2.9). The introduction of metal objects seems to take place at a time when fewer burial mounds were erected than in earlier periods; the boom of burial mounds in eastern Holstein then resumes after c. 1600 BCE.

Conclusion

Both the northern and southern case studies demonstrate that regional patterns are unmistakably contingent on lengthy as well as abrupt changes across wider tracts of southern Scandinavia and northern temperate Europe, with intimate ties to the inherently expanding networks of Corded Ware and Bell Beaker culture. In the southern area of the Cimbrian Peninsula especially, the preceding Globular Amphorae practices also shaped and mobilized indigenous farmers in new culturally and socially engaging ways. In a similar manner, contrasts appear in the local adaptation processes in various small regions. On this basis, we argue for differential patterns of change orchestrated by often traditionalizing constructions of social memory, but we also believe that change occurs because of breaks with these constructions. These local strategies were nonetheless shaped by, and contributed to, an increasingly globalized world during the Younger and Late Neolithic. The process from ‘stone to bronze’ was completed with an immense spatial expansion in evidence for the large-scale construction of burial mounds beginning at c. 1600 BCE and accelerating at c. 1500 BCE.

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3. On the Periphery of an Agricultural Society

Traces from the Formative Agricultural Period in Norway — A Case Study from Øygarden in Hordaland, Western Norway

Introduction

From the introduction and throughout the development of agriculture, outfield resources (i.e. all uncultivated land outside settlement and agricultural areas) have been important in Norwegian prehistory and history (Myhre 2002, 119), helping to maintain viable subsistence in coastal and inland areas. In order to understand general subsistence patterns in prehistoric contexts, it is important to analyse sites and subsistence activities in infield and outfield areas. The exploitation of outfield resources such as large mammals and fish, located away from farmhouses and agricultural fields, continues on a differentiated scale in Norway after the introduction and establishment of stable agricultural settlements in the Late Neolithic and Bronze Age (Myhre 2002). Due to its geographical position on the outer coast bordering the North Sea and the character of its natural resources, Øygarden is situated on the periphery of what became the central agricultural areas of Late Neolithic, Bronze Age, and Early Iron Age society in present day Hordaland county on the west coast of Norway, as suggested by the distribution of stray finds (Bakka and Kaland 1971; Aksdal 2000; Bergsvik 2012). It is in this context that sites from these periods on the outer coast of Hordaland must be analysed.

Øygarden, literally ‘fence of islands’, on the outer coast of Hordaland forms a characteristic row of islands bordering the North Sea to the west and comprises numerous islands and narrow streams with tidal currents and sounds (Fig. 3.1). The landscape is broken up by hills that reach a meagre 25–30 m a.s.l. and today it is a treeless heathland dominated by large expanses of bogs and small lakes. Glacial and marine deposits occur, but the amount of sediment deposited is generally small. Marine resources, particularly fish, have been abundant and a main source of livelihood both in prehistoric and historic periods.

This chapter discusses two sites surveyed and excavated in connection with the Kollsnes project in Øygarden carried out by the Historical Museum, University of Bergen, between 1989 and 1992 (Nærøy 1994, 2000). Site 17 Budalen had multiple phases with one settlement phase occurring at the transition from the Middle to the Late Neolithic, during the period of transformation of the population from hunter-gatherers to an agricultural population (Nærøy 2000, 154). The second site to be discussed, Site 9 Kvernepollen, consists of two settlement phases but is of interest as the main occupation took place in the pre-Roman Iron Age (Nærøy 1994, 191). It documents a pattern of hunting strategies in a predominantly agriculturally-based society, illustrating the transformation of the resource utilisation strategy that took place between the late Middle Neolithic and the pre-Roman Iron Age. 

Scholars have maintained that the economic and cultural changes that transformed western Norwegian society in the Middle and Late Neolithic must be seen in a European perspective in order to understand local developments (Prescott and Walderhaug 1995, 258; Prescott 2012, 116). These social, cultural, and subsistence changes have been viewed both as the result of internal processes within the hunter-gatherer population under the influence of external cultural spheres (Olsen 2009, 595; Bergsvik 2012, 111), and as a combination of the migration of people and the spread of cultural ideas linked to the Bell Beaker culture (Prescott and Walderhaug 1995, 273). Prescott (2012, 119) is correct in stating that the ‘interworking between these external and internal forces is probably the foundation for understanding the third millennium transition in Norway’. In this context, it is essential to analyse changes in the archaeological material at site level in order to model...
Figure 3.1. Map of Western Norway and Øygarden. The arrow indicates the Kollsnes area and the dot shows the modern city of Bergen (map by author).
the relationship between the micro and macro levels of such societal transformations. A general lack of sites, particularly towards the end of the Middle Neolithic (Olsen 2009, 592), makes such site analyses valuable in terms of developing models of site spatial and sociocultural patterns of change. The aim of this chapter is therefore to discuss aspects of subsistence, social, and cultural transformation as evidenced at two sites in a specific geographical and ecological niche on the west coast of Norway.

Site 17 Budalen — Traces of the Transformation of the Hunter-Gatherer Population

Site 17 Budalen has multiple phases with traces of settlements from the late Mesolithic, Middle Neolithic B, and pre-Roman/Roman Iron Age (Nærøy 1994, 145; 2000, 154). A lithic assemblage of 12,000 artefacts covering an estimated area of 260 m², structural features such as a dwelling with eighty-seven postholes, three fireplaces, and a midden deposit of 24 m², together with ten ¹⁴C dates document these three periods of habitation (Figs 3.2 and 3.3; Table 3.1). The main feature of interest is the dwelling which dates to the late Middle Neolithic B, rather than the Late Neolithic as the ¹⁴C dates indicate, in accordance with several lines of argument concerning the relation between lithic distribution and structural features, as well as an evaluation of the typology, technology, and chronology of the lithic assemblage.

The spatial distribution of lithic debris at prehistoric habitation sites was structured by features such as dwellings and fireplaces. This provides an important basis for arguing that there is a close connection between the dwelling and lithic debris at Site 17 Budalen. The main trend in the lithic distribution closely follows the outline of the dwelling, as reflected by postholes. This suggests that the dwelling was from the latest period of major lithic reduction and tool use. The distribution of lithic artefacts could have been disturbed by the construction of the dwelling through the excavation of drainage ditches or other constructional features, but this is not the case. The dwelling was constructed by the use of small posts or stakes driven vertically into the ground as illustrated in Fig. 3.3, without any extensive groundwork. The size, number, and placement of the postholes indicate that it was lightly built dwelling with some kind of wattled walls, and the layout indicates room partitioning. The number of posts, particularly where several are located close to each other, also suggests that the dwelling was repaired, indicating repeated or long-term use.

### Table 3.1. Site 17 Budalen and 9 Kvernepollen — list of ¹⁴C dates with calibration.

<table>
<thead>
<tr>
<th>BP ±/−</th>
<th>Cal BC/AD</th>
<th>Period</th>
<th>Context</th>
<th>Material</th>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-44287</td>
<td>7255 65</td>
<td>-6237 -6008</td>
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<td>Fireplace 1</td>
</tr>
<tr>
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<td>80</td>
<td>-2622 -2145</td>
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</tr>
<tr>
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<td>80</td>
<td>-2346 -1883</td>
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<tr>
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<td>90</td>
<td>-2187 -1771</td>
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<td>80</td>
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</tr>
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<td>60</td>
<td>-40 244</td>
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</tr>
<tr>
<td>Ua-3058</td>
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<td>356 77</td>
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<tr>
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<td>55</td>
<td>61 332</td>
<td>Roman period</td>
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<td>B-44288</td>
<td>1860</td>
<td>90</td>
<td>-42 380</td>
<td>Roman period</td>
</tr>
</tbody>
</table>

| Site 9 Kvernepollen |
| B-44285 | 2080 | 80 | -358 70 | Pre-Roman Iron Age | Fireplace 1 |
| B-44286 | 1710 | 80 | 131 535 | Roman period/Migration period | Fireplace 2 |

Calibration: OxCal v4.3.2. Bronk Ramsey (2017); r:5 IntCal13 atmospheric curve (Reimer et al 2013)
This type of dwelling is unique when comparing this settlement phase with earlier hunter-gatherer sites both in the local area and regionally in Western Norway. The dwelling does not resemble any of the Mesolithic, Early Neolithic, or Middle Neolithic dwellings documented in western Norway (Nærøy 2000; Fretheim 2017), neither does it compare to the Late Neolithic two-aisled houses in the Hordaland area (Diinhoff 2005). A dwelling is important for withstanding climatic challenges, as a functional space to organize and maintain a livelihood, and as a cultural marker. In this sense, major changes in building traditions as are evident when comparing the Site 17 Budalen dwelling with the small, circular dwellings with wall mounds found in the Early and Middle Neolithic in coastal areas of Western Norway (Nærøy 2000), signalling a transformation of cultural identity.

Furthermore, the lithic assemblage must be evaluated in terms of technology and chronological placement, as a means of both dating the dwelling and in a perspective of cultural change. The Middle Neolithic was, as far as lithic technology was concerned, a period of transformation; it was the final period in which lithic raw material was reduced by the use of platform cores to produce specific types of blades (Nærøy 1992, 92). The cylindrical core technology, which characterized Early Neolithic lithic technology in western Norway, can still be documented in limited amounts at some sites, but it is far from significant. Cylindrical cores are not documented at Site 17 Budalen and only one possible Neolithic tanged arrowhead was found. The assemblage is dominated by locally extracted quartz primarily reduced by bipolar knapping (Nærøy 1992, 151). Although this was a characteristic Middle Neolithic technology, the use of raw material is also a pattern of technological continuity since bipolarly reduced quarths also was used in earlier periods (Bergsvik 2002, 292).

Bipolar technology can also be viewed as an expedient technology, due to the use of local lithic resources and a less complex reduction process when compared to the curated Early Neolithic cylindrical core technology, which was based on the regionally transported raw rhyolite material. These two different ways of organizing lithic technology relate to differences in both subsistence and socio-cultural patterning. The technological changes and continuities — as well as the change in type of dwelling — are indications of economic and cultural changes taking place among the local population in present day Hordaland throughout the Middle Neolithic.

A further argument for placing the dwelling in the Middle Neolithic B, in terms of the lithic artefact assemblage, is that the only trace of Late Neolithic and Bronze Age pressure flaking technology from
Figure 3.3. The postholes at Site 17 Budalen (1: Turf, 2: Sand, 3: Charcoal and Humified Sand) (Næray 1994, fig. 118).
the site is a fragmented pressure flaked point (Nærøy 1994, 152). The large amount and character of bipolar flaking on quartz present at the site is not a Late Neolithic technological trait. People were present in the area in the Late Neolithic and early Bronze Age but there is no clear settlement phase from this period at Site 17 Budalen.

Another feature that is unique for the site are the sheep faeces, found in two postholes, which are dated to 2346–1883 cal. BCE (Table 3.1, Fig. 3.4). Irrespective of how many phases were present, the direct dating of the sheep faeces documents the presence of husbandry as part of late Middle Neolithic B subsistence, or potentially occurring right at the threshold between the Middle Neolithic B and Late Neolithic. This corresponds to the interpretation of husbandry being present in the Middle Neolithic, as documented by palynological evidence (Hjelle, Huffhammer, and Bergsvik 2006; Halvorsen and Hjelle 2017). Unfortunately, there is no pollen material sampled from the vicinity of Site 17 Budalen and thus no possibility of documenting agricultural activity in terms of crop cultivation. If this existed however, it would probably have been in the form of small-scale cultivation since the potential available farmland was limited. Furthermore, eighteen macrofossil botanical samples were analysed from seven postholes and three fireplaces (Soltvedt 1994, 223). None of these samples contained evidence of agricultural activity in the form of cereals. This should have been the case if crop cultivation was an important and integral part of subsistence at Site 17 Budalen.

Stratigraphically and in terms of 14C dates, Site 17 Budalen is, to some extent, contextually complex. The 14C dates have age determinations from both the Middle and Late Neolithic (Table 3.1). The sheep faeces which are from a context with small dangers of contamination, were dated to the transition between the Middle Neolithic B and the Late Neolithic. This is also the case for a dated birch fragment from a second posthole (Nærøy 1994, 152). This transition has been placed at 2400 cal. BCE (Prescott 2012, 115), or 2200 cal. BCE (Hjelle, Huffhammer, and Bergsvik 2006, 150) in the western Norwegian context. The lack of sites with contextually secure datable contexts makes a precise dating of the transition difficult (Olsen 2009, 590). The difficulty in defining a precise date for the transition reflects both the lack of sites within this time frame, but possibly also complex cultural and social dynamics have created an archaeological record that is difficult to interpret. The contextual and artefactual evidence from Site 17 Budalen argues in sum for a late Middle Neolithic B date; or a settlement phase in the transition between the late Middle Neolithic B and early Late Neolithic for the dwelling unit.

The presence of animal husbandry in the Early and Middle Neolithic, as is evidenced by palynological data, does not seem to have influenced the general settlement pattern in terms of the location of the sites in coastal areas (Hjelle, Huffhammer, and...
3. ON THE PERIPHERY OF AN AGRICULTURAL SOCIETY

Bergsvik 2006, 160; Bergsvik 2012, 101; Halvorsen and Hjelle 2017, 682). Even if Site 17 Budalen still was located in the same coastal landscape as hunter-gatherer sites from previous periods, its location in the micro-topography differs in that it is further removed from the beach zone than shore-bound Mesolithic and Early Neolithic sites (Bergsvik 1994). Whether this change was representative for coastal areas on a regional level is uncertain, but it is still important for the interpretation of this specific site. Even if this is a change that is visible only on a topographical microscale, it may, however, be argued that this change is important as it reflects subsistence and cultural preferences of a particular group of people, as well as the role the site played in the settlement pattern in Western Norway.

To summarise the discussion of Site 17 Budalen, it may not be appropriate to interpret the site as being on the periphery of an agricultural society. The site may, in fact, be better understood as located in a landscape of outfield resources. An area which, in the continuation from the Mesolithic and the Early Neolithic, was a main resource area for sustaining a livelihood in the late Middle Neolithic. Husbandry as part of the agricultural complex transforming the population throughout the Middle and Late Neolithic, had made its impact on site structure, subsistence, social and cultural features of the population in coastal western Norway. Site 17 Budalen illustrates that husbandry was integrated into the late Middle Neolithic B economy.

In addition to the presence of sheep, evidence of a transformation can be seen in the change of site location, site structure and lithic technology. It may be argued that the impact of husbandry on subsistence may have caused the disappearance of the longstanding Mesolithic and Neolithic tradition of making blades on prepared cores used for hunting and utility tools. The bipolar technology, however, represents an aspect of cultural and technological continuity throughout the Middle Neolithic.

The shift from a predominantly hunter-gatherer subsistence to a subsistence based on animal husbandry is an important change that took place at the end of the Middle Neolithic B. Given a correct chronological interpretation of Site 17 Budalen, the site therefore suggests that, although the Middle Neolithic to Late Neolithic transition was abrupt, the local population had undergone a decisive shift in subsistence and socio-cultural practices, which may have made the final transformation to an agricultural community easier.

Figure 3.5. The structure of Site 9 Kvernepollen (1: Charcoal-Mixed Sand, 2: Fireplace 1, 3: Fireplace 2, 4: Sand, 5: Rock Outcrop, 6: Slabs) (Nærøy 1994, 194, fig. 158).
Site 9 Kvernepollen — A ‘Hunter-Gatherer Site’ in the Pre-Roman Iron Age

In Western Norway, society in the pre-Roman Iron Age was different from society in the late Middle Neolithic B and early Late Neolithic. The changes that took place in subsistence, social and cultural features, and ideology at the Middle/Late Neolithic transition, continuing into the Bronze Age, transformed western Norway into an agriculturally based society with a hierarchical structure. Scholars have demonstrated that outfields resources were utilised in mountain areas during the Late Neolithic, Bronze Age, and pre-Roman Iron Age, illustrating the importance these resources had for the subsistence of the population (Bjørko, Kristoffersen, and Prescott 2003, 302; Prescott 1995, 132). Areas such as Øygarden in coastal western Norway, with its rich marine environment and resources, are also excellent examples of the continued importance of outfields resources. Site 9 Kvernepollen is one such example, illustrating a subsistence pattern where an agricultural population continued to rely on outfields resources in the pre-Roman Iron Age (Bergsvik 2006, 127).

Site 9 Kvernepollen is much smaller and contextually simpler than Site 17 Budalen. The site has many structural features in common with numerous Mesolithic and Early Neolithic hunter-gatherer sites in coastal areas of western Norway (Bjerck 2008), containing two fireplaces, a midden area of 15 m² with charcoal-mixed sand, and an associated lithic distribution of 2,700 artefacts covering approximately 30 m² (Fig. 3.5). Its location in the landscape is similar to a ‘classical hunter-gatherer site’ as it was close to the seashore but also in a protected position in a bay on the eastern side of the island Oni. The ¹⁴C dates indicate, however, that there was more than one settlement phase at the site (Table 3.1).

The oldest fireplace dates to the pre-Roman Iron Age, in line with the typological date of the projectiles recovered from the site (Prescott 1986, 153; Mjærum 2012, 127). Fireplace 1, dated to 358–70 cal. CE, was situated in a 1 x 1 m pit of oval shape and excavated 5–10 cm into the ground at the centre of the site (Nærøy 1994, 191). It contained charcoal-mixed, humified soil with sand and a few stones. Fireplace 2, dated to the Roman/Migration periods (131–535 cal. CE), was a secondary intrusion, situated slightly off the centre of the site. It was 1 x 1 m, consisting of a 5–10 cm thick charcoal layer with large charcoal pieces and unburnt wood. It was covered with 5 cm thick charcoal-mixed sand. The charcoal was located directly on top of small stone slabs, which rested on the underground soil.

There were no artefacts associated with this settlement phase.

The lithic assemblage recovered from Site 9 Kvernepollen consisted of thirteen pressure flaked points and eighteen retouched/used pieces (Nærøy 1994, 196). The amount of small chips and micro debris indicates that pressure flaking was the only lithic technology used at the site. Bifacial pressure flaking technology was introduced at the Middle to Late Neolithic transition in western Norway as part of a cultural package, coming to define the lithic technology of the Late Neolithic and Bronze Age. Pressure flaking, mainly to produce projectile points, daggers, and sickles, occurred alongside the introduction and use of metal tools in the Bronze Age, continuing into the pre-Roman Iron Age. Site 9 Kvernepollen, with the pressure flaking technique, is an example of this final prehistoric phase of lithic technology.

Site 9 Kvernepollen can be interpreted as a site for bow and arrow hunting in the pre-Roman Iron Age. The tool production and use suggest a restricted and specific range of activities. The lack of organic remains limits the interpretation of the site to likely being primarily a hunting station, although fishing may have been an important resource for the site inhabitants. Two pre-Roman Iron Age sites investigated in the inner coastal areas at Skatestraumen in Sogn og Fjordane represent an interesting contrast to Site 9 Kvernepollen (Bergsvik 2006). These sites included larger deposits of debris and waste, they contained a broader range of artefacts including pressure flaked lithic tools, tools, and utensils made of soapstone and pottery. According to Bergsvik (2006, 122), these sites represent basic family units with subsistence based on husbandry, small-scale agriculture, fisheries, and hunting in a settlement pattern with multiple sites in seasonal use. This is contrasted to populations located at year-round settled sites in areas more suited to agriculturally based subsistence, with an ideology enabling them to develop social and political hierarchies (Bergsvik 2006, 127).

To some extent, this may be reminiscent of the cultural dualism model, which promoted the idea that Mesolithic hunter-gatherer populations continued their existence throughout the Neolithic, receiving influences from and existing alongside agricultural populations (Gjessing 1944; Hinsch 1956). This implied a situation where two different groups of people lived alongside each other, but in different areas with different subsistence strategies — the hunter-gatherer and the farmer. The idea of cultural dualism is part of the research history of Norwegian archaeology but it is presently not a viable model for western Norway. However, on the basis of these sites, it is difficult to resolve the question...
of whether they represent seasonal sites for an agricultural population or rather evidence of a regional distribution of groups with different subsistence strategies but within the same cultural ideology. At the same time, it is interesting to note the difference between Skatestraumen and Site 9 Kvernepollen in terms of a more varied activity pattern, broader economic basis, and social composition of the site inhabitants for the Skatestraumen sites.

Site 9 Kvernepollen was an integral part of a subsistence pattern and therefore also the social and cultural system of that period. Whether the site inhabitants originated from a stable agricultural settlement or a task group in a more labile settlement system is, however, difficult to assess. The contrast to the late Middle Neolithic phase at Site 17 Budalen is evident. This was a single purpose site with a single and short-lived habitation phase. The notion of a task group with a specific resource harvesting strategy is a reasonable assumption for the purpose of the site. The social composition of the groups utilising Site 17 Budalen and 9 Kvernepollen was of different character, as indicated by differences in both the size and the structural character of the sites. However, the pre-Roman Iron Age coastal sites together with mountain sites stress the importance of ‘outfield resources’ in the subsistence strategy for the population in the pre-Roman Iron Age.

**Final Remarks**

Site analyses in terms of understanding the subsistence patterns, social structure, and cultural features of the groups that created a particular archaeological record are of importance in order to understand long-term societal transformations. As such, the two specific Øygarden sites discussed above are evidence of developments in the initial millennium of agricultural society in western Norway.

These two sites were part of complete subsistence and settlement systems, which consisted of sites with different locations, characters, functions, and social compositions. As such, they are not comparable entities in terms of grasping an overall view of the social structure of that particular society. What they are, however, are sites situated in the same landscape, where the resource situation, although separated by a millennium, in all likelihood was relatively comparable. One possible model for this context is the site development from a single, basic, and seasonally mobile complete social unit in the late Middle Neolithic into a site which, in ‘hunter-gatherer phrasing’, represents a single-purpose, seasonal, task group site, probably also part of a predominantly agriculturally-based society in the pre-Roman Iron Age.

Both Site 17 Budalen and Site 9 Kvernepollen were small-scale settlements of very different site structural character, and therefore different in terms of the social composition of the site inhabitants and their shared social and cultural ideology. However, in both cases what can be termed ‘outfield resources’ are important factors for the settlements in this local area.

**Acknowledgements**

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4. The Contrasting Region of Hedmark, South-East Norway

A Border Zone Through Three Millennia

Introduction

In the past, people used different landscapes for diverse purposes within the borders of present-day Hedmark. In this chapter, the contrasts of past material culture within various parts of Hedmark are discussed in relation to diverse land uses in a long-term perspective, from the Late Neolithic to the Medieval Period. This chapter aims towards an understanding of how people and nature influenced each other through the centuries in different regions of Hedmark, and how variable trends developed. Based on this, our core questions are: Why were contrasting material cultures found within Hedmark through this long-time span, and what were the cultural contexts of those contrasts? The diverse patterns will be analysed and discussed in relation to questions of regionality, paying special attention to interesting contrasts noted through the millennia.

This chapter considers periods ranging from the Late Neolithic and the Bronze Age, to the Early Iron Age, the Late Iron Age, and finally, the Early Medieval Period. Earlier periods, such as the Mesolithic and the Early and Middle Neolithic, are briefly presented as a background for later trajectories. Hence, the chronology addressed is long. The analysis and discussion are, however, restricted to a few, selected regions and focused on the main characteristics of the material culture, in order to able to analyse changes and recurring patterns through time.

Background

Hedmark is part of the large inland region of south-eastern Norway (Fig. 4.1). The study area, covering 27,398 square kilometres, consists of forest and mountain areas in the north-east, as well as elongated valleys in the central parts, where there were excellent opportunities for hunting and other activities, like iron extraction. The valleys also provided landscapes suited to agriculture, often with farms and hamlets established along the watercourses. In the south-western region there are rich and fertile farming areas.

The different landscapes of Hedmark are a starting point for understanding the distribution and context of the evidence from prehistory. Differences in the material culture are particularly evident between today’s agricultural districts and the forests and mountains, but diverse patterns can be seen in the vast outlands as well. Extensive research has been carried out on the prehistory of Hedmark, including a PhD study that examines the contrasting regions and ethnic relations in the Neolithic and the Bronze Age (Amundsen 2011; 2017a; 2017b). Another relevant thesis discusses the distinctive and geographically circumscribed iron bloomery activity in the context of technological, economic, and political developments from chiefdom to kingdom in the Late Iron Age and the Medieval Period (Rundberget 2007; 2012; 2016). The recognition of the different regions, as well as the diverse uses of the landscapes, is fundamental to these studies, which are brought together in this chapter.

1 Hedmark was a former administrative county from 1919 to 2019. From 2020 Hedmark is part of the new administrative unit Innlandet county.
Figure 4.1. Hedmark with the study area and the three main regions marked (map from NIKU 2019).
The selected study area is restricted to a part of Hedmark, divided into three regions (Fig. 4.1). The north-eastern region consists of Engerdal municipality, including eastern Trysil and the north-eastern part of Rendalen. In this region there are forests, hills, mountains, and waterways, including very high mountain plateaus. The second region is the southern and middle part of the eastern valleys, with the municipalities Elverum, Åmot, and Stor-Elvdal, all linked to the River Glomma. In addition, the western part of Trysil and the southern part of Rendalen are defined within this region. Altogether, this region represents three parallel valleys, with forests, hills, and mountains. There are also agricultural areas, particularly along the lakes and rivers, as well as traditional shielings. The third district is the south-western region, with the four municipalities of Hamar, Stange, Ringsaker, and Løten. It is a fertile agricultural area, with rich farms. In this region, Lake Mjøsa, the largest lake in Norway, is a central element of the landscape.

There are many unexplored areas and topics concerning the archaeological features in Hedmark. In general, the intensity of archaeological surveys is low, especially in the forests and mountains. Moreover, the chronological framework is complex and problematic. This has to do with the lack of surveys, but at the same time, some material objects and structures were manufactured and constructed, used and reused over long periods; examples include pressure flaked bifaces and trapping systems (Amundsen 2011; 2017a). Moreover, cultural processes and changes took place within a much larger context. Where appropriate, there are references to neighbouring and more distant regions.

### Contrasting Regions from the Late Neolithic to the Medieval Period

In the following sections, the evidence is presented and discussed by time period based on questions of regional contrasts. For time frames of the different periods, see Table 4.1. To provide a background, the earliest settlements and activities in Hedmark are introduced first.

#### The First Inhabitants

In the Mesolithic, subsistence was based on hunting and gathering, with highly mobile communities. In Hedmark, sites and stray finds from the Middle and Late Mesolithic are mainly located by the lakes and rivers (Boaz 1997; Amundsen, T. 2007; Stene 2010; 2014). The use of different raw materials such as flint, jasper, quartzite, and quartz are characteristic. Imported flint indicates external networks (Fuglestvedt 2006; Amundsen 2011, 271–72). Another interesting trait is the regional use of red jasper, extracted from a quarry in the eastern valleys (Lannerbro 1976; Sjurseike 1994; González 2014). One rock carving with elk and other figures by Lake Mjøsa date to the last part of the period (Mikkelsen 1977).

In the Early Neolithic, farming appeared in southern Scandinavia, but in the inland regions such as Hedmark, agriculture seems to have increased in importance from the Middle Neolithic. In the south-western region, south Scandinavian flint and stone axes are associated with today’s rich agricultural areas (Amundsen 2011, 153–54). In contrast, in the north-eastern region, remarkably no elements of southern Scandinavian character have been recognized to-date (Mikkelsen and Nybruget 1975; Amundsen 2011, 247, 259–61). The eastern valleys seem to be an expanded part of the south-western region, but at the same time, the occurrence of slate artefacts suggests more extensive hunting (Amundsen 2011, 220–34; Stene 2010; 2014).

Overall, the uneven distribution pattern of artefacts in Hedmark during the Early and Middle Neolithic is remarkable. In the following periods the regional contrasts are clearly illustrated, showing that these early trends not only continue, but are reinforced.

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### Table 4.1. The dates of the different periods (bce–ce)

<table>
<thead>
<tr>
<th>Periods</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Mesolithic</td>
<td>Middle Mesolithic 4750–4650 BCE</td>
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<td></td>
<td>Late Mesolithic 4650–3800 BCE</td>
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<tr>
<td>Neolithic</td>
<td>Early Neolithic 3800–3300 BCE</td>
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<tr>
<td></td>
<td>Middle Neolithic 3300–2350 BCE</td>
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<tr>
<td></td>
<td>Late Neolithic 2350–1700 BCE</td>
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<tr>
<td>Bronze Age</td>
<td>Early Bronze Age 1700–1100 BCE</td>
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<tr>
<td></td>
<td>Late Bronze Age 1100–500 BCE</td>
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<tr>
<td>Iron Age</td>
<td>Early Iron Age</td>
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<td></td>
<td>Pre Roman Iron Age 500 BCE–1 BCE</td>
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<td></td>
<td>Roman Iron Age 1 CE–400 CE</td>
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<td></td>
<td>Migration Period 400–375 CE</td>
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<td></td>
<td>Late Iron Age</td>
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<td></td>
<td>Merovingian Period 575–750/800 CE</td>
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<tr>
<td></td>
<td>Viking Age 750/800–1030 CE</td>
</tr>
<tr>
<td>Middle Ages</td>
<td>Early Medieval Period 1030–1300 CE</td>
</tr>
</tbody>
</table>
The Late Neolithic and the Bronze Age

In the Late Neolithic and the Bronze Age, after the introduction of agriculture, followed by bronze casting, societies and cultural relationships began to change. Hunting activities continue to be of importance, both to agrarian societies and hunter-gatherers in the forests and mountains (Prescott 2009). However, the farmers and the hunter-gatherers had different emphases on hunting. These subsistence distinctions are evident in Hedmark, with meeting points and contact zones discernible both within and between the regions.

In the north-eastern region, no material of a south Scandinavian character is known from the Late Neolithic or Bronze Age. Neither do pollen analyses reveal any evidence of early agriculture (Høeg 1996; 2005a). This is the same remarkable pattern from the Early and Middle Neolithic, as outlined above. The north-east does, however, have largest concentration of pressure flaked quartzite items in Hedmark (especially bifacial arrowheads, and some stray finds of points and spears), located along the lakes in Engerdal, particularly Lake Femunden (Bolstad 1980; Amundsen 2011, 233–61; Mjærum 2012). Also, a quartzite quarry was uncovered in the northern part of Lake Femunden (Nyland 2016, 130–32). An early dagger of quartzite (Type Ib) was found in the northern part of the waterway of Femunden (Amundsen 2011, 248), of the same type as a dagger found by Lake Osensjøen in Åmot (Amundsen 2011, 205–07; see below). As a parallel, red quartzite daggers and/or spears are known in Dalarna, the adjacent region in Sweden (Lannerbro 1976, 59; Wehlin and Norell 2016). It is significant that local quartzite was used to make daggers in this northern area, very far from the south Scandinavian core region of flint daggers (Apel 2001; Amundsen 2011, 276–77).

In the eastern valleys, items of south Scandinavian type are few and scattered. These items are mainly flint daggers, with a few shaft-hole axes and two flint-sickles — most are located by the watercourses (Amundsen 2011, 171, 234–37). Two ritual offerings of flint daggers are known (Type VI), found by Lake Storsjøen in southern Rendalen and in a wetland connected to the River Glomma in Åmot; these daggers refer to a southern Scandinavian sacrificial tradition far from the established farming societies of the time (Amundsen 2011, 175–76, 217, 235, 266–67). Pollen samples indicate the presence of agricultural activities from Elverum and Åmot, four cup-mark stones are located within shielings and within a field of clearance cairns, which may indicate early agricultural activities (Høeg 1996, 2005a). A single bronze object, a Mälardal celt, was found by Ljøra, the easternmost river in Trysil, pointing to a connection with contemporary Swedish landscapes (Brøgger 1908; Amundsen 2011, 229–331). A quartzite dagger (Type I) was found by Osensjøen in Åmot, not far from a flint dagger of the same type (Amundsen 2011, 205–07). Numerous hammer stones (in Norwegian: skaffurekøller) are concentrated around the rivers in Trysil and Lake Osensjøen, suggesting this was a central area for the use and distribution of these peculiar tools (Amundsen 2011, 236–37, 277–79). As a contrast, further north in Engerdal only two hammer stones are known (Amundsen 2011, 277–79). In general, hunting activities in the valleys are represented by pressure flaked arrowheads of flint and quartzite — however, only a few sites are known that produced quartzite tools. Considering the many archaeological investigations in this area, especially in Åmot (Stene 2010, 2014), the lack of quartzite in the eastern valleys underlines the uniqueness of the quartzite complex in Engerdal outlined above (Amundsen 2011, 280–81).

In the south-western region, there is a clear increase in material culture dated to the Late Neolithic and Early Bronze Age. This is particularly so in the agricultural communities along Lake Mjøsa but is evident in the interior landscapes as well. The artefacts are mainly shaft-hole axes and flint daggers, with one bronze sword also known; some of the artefacts are found in contexts that indicate ritual offerings, such as wetlands and areas of scree (Amundsen 2011, 153–56). In the Late Bronze Age more bronzes are found in ritual contexts (Johansen 1981); there are two quite unique sacrificial sites of flint blades or knives for harvesting (in Norwegian: lavkniv) (Amundsen 2018). Moreover, several fields of burial cairns from the Bronze Age are located along Lake Mjøsa, reflecting settlements and property. Pollen analyses indicate continuous agricultural activity, including grain cultivation (Høeg 1996; 2005b). Many cup mark localities are known. The cup marks may have been symbols of fertility for the early farmers. A small number of pressure-flaked arrowheads of flint and quartzite, six hammer stones, and sites by the lakes indicate some hunting activities are present in the south-west (Amundsen 2011, 153–56).

Hunting systems for reindeer and elk are also present throughout Hedmark. Some early dating of pitfalls for elk go back to the Bronze Age (Gustafson 2007; Amundsen 2011, 59–60), implying that organized hunting of big game began in this period. However, the most extensive use seem to be in the Early Iron Age and the Medieval Period, and as such these systems are discussed in more detail in the following section.
The Iron Age and the Medieval Period

Culture and society changed in many ways during the Iron Age and the Medieval Period. A significant transformation was the introduction of Christianity in the early Middle Ages. Churches were established within the built-up areas (Brendalsmo 2003). In the last part of the Iron Age and in the Early Medieval Period, Norse society also became established and Norway was recognized as a kingdom.

Settlement and its development clearly point to regional contrasts within the study area. In the eastern valleys, Rendalen has several archaeological finds from the end of the Early Iron Age. In Solendalen, archaeologists excavated a burial dated to the pre-Roman Iron Age (Skjølvold 1981), which indicates earlier settlement in the mountains, probably of nomadic hunters (Bergstøl 2008, 46–100, 103). Brøgger (1942) argued that parts of the area were settled in the fifth to sixth centuries CE, and from artefact typology he believed that groups from Trøndelag or central Sweden settled there. Eight finds are dated to the Merovingian Period and several finds and graves are from the Viking Period and Medieval Period. Based on farm names studies, Sørensen (1981, 67) assumed that the first agrarian settlements started early in this period. Sixty farms were established by 1350, with more to follow in the Viking Period.

In contrast, the southernmost part of the north-eastern region, Trøysil, has only a few stray finds from the Iron Age. None are as early as in Rendalen. Only graves are known from the Merovingian Period, with evidence otherwise dating to the Viking Period and Middle Ages. Much of this evidence comes from the farms which demonstrate permanent settlement. In the Medieval Period, farm names indicate that further forest clearance was undertaken. A number of hunting arrowheads of this date have also been found (Lillevold 1977, 43–47; Bergstøl 2008, 119–21). Several graves, however, are believed to be associated with an older hunting society (Bergstøl 2008, 121–22), which indicates that there had already been other forms of settlement in this district prior to the widespread establishment of farms.

Turning to the eastern valleys, in their northernmost parts there are no farm names that can securely be assigned to the Early Iron Age (Hveberg 1949, 8). Moreover, only three finds have possible dates in the Early Iron Age. One axe and one celt are dated to the seventh century CE, but artefacts are otherwise mostly known from the Viking Period and the Medieval Period (Bergstøl 2008, 62–65). From analysis of the farm names, about ten are thought to have been established in the Viking Period (Hveberg 1949, 8). In general, settlement then intensifies throughout the Medieval Period (Sørensen 1981, 68).

In Åmot in the central part of the eastern valleys, there were no stray finds from the Early Iron Age until excavations along the River Rena revealed an iron adze radiocarbon dated (using charcoal in the iron) to 80–260 CE (Damlien 2010, 415; Stene 2014). A significant increase in finds is then noted in the Viking Period. Burial mounds are known from several places (Sørensen 1979, 76–81; Bergstøl 2008, 55–59), but no farm names are likely to be earlier than the seventh century CE (Hveberg 1949, 8; Sørensen 1979, 82).

Conversely, there are dated bloomery sites and cooking pits in the outlying areas that show activity in the forests and valleys of Åmot in the pre-Roman and Roman Iron Age. One bloomery site is situated near a shieling, and we assume that the site was the basis for the iron production. Two cooking pits were found by the shieling, one dated to 220–315 CE and the other to 535–95 CE, which suggests that the shieling could be of Roman Iron Age origin. Pollen analysis from the latter pit reveals that there was a thinning of the forest and signs of the landscape being used as a pasture at that time (Amundsen 2007, 57–61). This activity has been interpreted as associated with an agrarian culture which had already been established on a smaller scale in the Roman Iron Age (Rundberget 2007, 109).

However, not until the Late Iron Age was there more extensive settlement established in Åmot. The number of farms around 1350 was seventy-two, half of which had been established in the Medieval Period (Sørensen 1999). Settlement studies are based solely on normal farming, and Narmo (2000, 127) has rightly emphasized that forms of settlement were also based on other economic strategies. This view is supported by outlying finds. Both permanent settlements and shielings became common perhaps as early as the Late Iron Age and especially in the Viking Period (Bergstøl 1997, 27–33; Amundsen 2007, 285; Stene 2014). A pollen sample from a lake in the area indicates pasturing in the Late Iron Age (Stene 2014, 132–34). Field terraces are another feature pointing to early farming, interpreted as remains of a form of farming which differed from usual agricultural practices — they were in use from the Merovingian Period to the fourteenth century (Bergstøl 1997, 79–80; Holm 2007; Amundsen 2011, 181–82).

In the southern part of the eastern valleys, three objects were found which might date to the Early Iron Age (Østmo 2000, 33; Bergstøl 2008, 37–38). A few farms also have names which probably derive from the sixth or seventh century. There is some cultural material from the Merovingian Period, but the quantity of finds increases from the Viking Period,
when place names indicate extensive new clearances for farms and there are a number of burial mounds (Sørensen 1979, 67–76; Østmo 2000, 38–55). During recent years, many new metal detector finds, such as the unique iron hoard at Storhov (Post-Melbye and Rundberget In Press), show that the activity in this part of the valley may have been more extensive in the Merovingian Period than in earlier periods. Together, the archaeological finds point to an earlier and perhaps richer community than is observable in the central and northern parts of the eastern valleys. This pattern can be related to development of the areas to the west and south.

The settlement history of the south-western part of the study area is markedly different from that of the eastern valleys as in the south-west extensive agriculture was practiced throughout the Iron Age. The number of farms from the Iron Age is much higher than in the eastern valleys. Two centres stand out: the major farm of Åker and the trading site of Hamar. Åker was the most important chieftain’s seat in the Late Iron Age and was also the royal seat for the monarchy in the Early Medieval Period (Sæther 1994; Pilø 2002). Åker controlled outfield resources such as iron, hunting, tar, and timber, as well as the distribution of these from the forest, mountain, and agricultural areas — the farm thereby participated in regional and supra-regional trade networks. From its accessible position on Lake Mjøsa, it was a natural choice as both a ‘thing’ or assembly site (þing in Old Norse) and a centre where surpluses from farming and resources from outlying lands could be exchanged.

Extracting and exchanging resources from the outfield became the most important economic system throughout the whole study area in the Iron Age and Medieval Period. The specific activities show regional variations and contrasts over time. One of the most important activities was hunting; a large number of trapping systems were in use during the Iron Age and the Medieval Period and, as mentioned above, some even date back to the Bronze Age (Holseng 2004; Mathiesen 2005a; 2005b; Bergstol 2008; Spångberg 2014). The systems cover much of the study area, being located in the forests, in transition zones between forests and mountains, and up to the mountain plateaus.

Iron bloomery is another activity that had an important economic role during the Iron Age and Early Medieval Period. Especially in the eastern valleys, large scale extraction is detected from the late Viking Period and Early Medieval Period — thousands of sites related to iron bloomery have been detected (Narme 1997; Rundberget 2007; 2016). During the large excavation project at Gråfjell in Åmot, more than forty iron bloomery sites, 250 char-

coal pits, and thirty ore roasting places were excavated (Rundberget 2007). In the Early Iron Age there are also traces of iron extraction in the region, but in much lower quantities. The intensive resource utilisation is obviously connected to the new and rising settlements. An interesting question is what relationships the new system had vis-à-vis the older societies and structures which had existed in the various landscapes of Hedmark for a long time.

Discussion

The varied activities reflected by differing material culture show that what is now Hedmark was constituted of contrasting regions from the Late Neolithic to the Medieval Period. How can we interpret and understand these different patterns?

Earlier in the Mesolithic, imported flint throughout the study area indicates external networks, while the use of jasper in the eastern valleys and partly in the north-eastern region is a more spatially distinctive feature. No jasper is found in the south-western region, signalling a different scenario. In the Early and Middle Neolithic, there appears to be a correlation in the use of landscapes between the south-western region and the eastern valleys. Likely, the same people inhabited both landscapes. As a contrast, the north-eastern region seems not to have been heavily exploited during those periods.

The uneven distribution of material culture (in types, numbers, and locations) becomes even clearer in the Late Neolithic and the Bronze Age. A pattern of contrasting regions is clear and there has been previous discussion within Nordic archaeology regarding the cultural dualism between farmers and hunter-gatherers, particularly regarding developments in the interior and northern districts of the Scandinavian peninsula (e.g. Baudou 1956; 1989; Bakka 1973; 1976). In Hedmark, scholars have raised the question whether a border between cultural forms and modes of production coincides with climatic and ecological boundaries: between the Cambrian-Silurian areas in the southern part and the taiga, the vast coniferous forest belt, in the north (Bjørn 1934; Hagen 1946; discussion in Amundsen 2011, 35–41). With this previous research in mind and informed by our own studies of material types and distributions, we argue for a model in which diverse traditions developed within the borders of present day Hedmark. Two main cultures and societies with different external networks were established in different regions, at least from the Late Neolithic onward. Moreover, this pattern intensified and strengthened in the Bronze Age.
In the north-eastern region of Hedmark, the landscape context, sites, and artefacts point to analogous societies of hunter-gatherers also living farther to the north and north-east. The quartzite complex indicates extensive hunting, probably of reindeer (Holm 1991; Forsberg 2005). The material in the region is distinct, but at the same time, only a few categories of material culture are represented. There is no evidence of eastern bronze artefacts or asbestos ceramics. These materials are more common in northern Norway in the Bronze Age, indicating networks eastwards to Finland and Russia. Despite these observations, it seems clear that the quartzite complex in Engerdal constitutes the south-western part of a much wider network of hunter-gatherers in the Nordic inland from the Late Neolithic onward. This larger picture may explain why quartzite material is sparse in the eastern valleys. The south-western branch of a much larger complex of late hunter-gatherers extends to the watercourses in Engerdal, but not much further to the south.

In the south-western region, conversely, early farmers who settled in the fertile areas and hillsides by Lake Mjøsa were aligned towards a southern Scandinavian community. Apart from one isolated arrowhead of red quartzite found in an agricultural parish, no other material provides evidence of any contact with the contemporary hunter-gatherers to the north-east (Amundsen 2011, 138–39). Some south Scandinavian items are found in the eastern valleys, but the River Trysil seems to have been a border for the distribution of this type of material.

Another distinct and parallel development is illustrated by the mixed material packages in the valleys, indicating a common area of landscape use between the two main groups. Other evidence of contact is reflected in the similarity of bifacial technology, and in the manufacturing of flint and quartzite daggers. The two early quartzite daggers (Type I), found in the north-eastern region and the eastern valley, may well demonstrate interaction as well. At the same time, the quartzite daggers might symbolize a dual meaning of contrast and distance, as does the choice of another raw material in the manufacture of a classic southern Scandinavian object of the time (Amundsen 2017a).

Overall, the mixed material culture in the valleys indicates a meeting or crossing point between the groups to the north-east and south-west. In this broader context, the eastern valleys are interpreted as a ‘landscape in between’ or an ‘in-between space’. This implies that the valleys should not be regarded as a geographical periphery, but instead be perceived as a zone of transformation and hybridity where encounters between early agricultural cultures and late groups of hunter-gatherers took place (Nordenborg Myhre 2004, 26–34).

In the Iron Age, hunting became separated into several types, from isolated hunting traps to extensive systems. There are two main types: pitfalls for elk in the forests and the transition zones, and pits for reindeer in the high mountains area. The pitfalls were mostly organized in large systems blocking choke points where large herds of animals migrated — systems consisting of converging fences that end in enclosures were also in wide use (Amundsen and Os 2015). This variation indicates new and different economic drivers; individual hunting traps are relatively easy to operate and maintain, while the larger systems clearly needed greater organization. The smaller hunting arrangements were probably operated by a few people, but the large-scale hunting systems were made for mass-hunting. They were orientated towards external markets with a high level of organization performed by specialists, and may have been managed by multi-settlement hunting societies. Some of these hunting systems were likely to have been operated by Norse farming communities as well (Bergstøl 2008; Amundsen and Os 2015; Amundsen 2017a).

Over a large part of the region hunting activities appear most intense in the Early Iron Age. The broad archaeological and historical evidence implies that hunting sites largely went out of use in the sixth century CE (Bergstøl 2008, 185–86), however, there are divergences from this picture. In the northern mountain area of the north-eastern region as well as in the northern part of the eastern valleys, reindeer hunting took place on a massive scale in the Viking and Medieval Periods. As mentioned above, the extent of the hunting exceeded the manpower capacity of the settlement and other groups must have been involved in the activity.

The rise of iron bloomery in the Late Iron Age also supports the idea that different groups were in the eastern valleys at the same time with clear contrasts between ways of living. In a technological and organizational perspective, the large-scale iron bloomery practice is interesting as it seems to have had an entirely different structure than other bloomery regions. The excavations in Gráfjell (Rundberget 2007; 2016) have brought to light a tradition where types of furnaces and charcoal pits, organization at the production sites, use of resources, and organization within the landscape distinguish the eastern valleys from other production areas in Norway. Surveys also show that this tradition spread throughout large parts of the woods of the eastern valleys (Rundberget 2016). Gráfjell is only a small part of a widespread tradition in the study area which begins.
In recent years, studies of the outfields have provided new knowledge concerning the development of society (Svensson 1998; Narmo 2000; Holm 2007; Rundberget 2016). Excavations at Rødsmoen demonstrate that from the early seventh century there were two different cultural groups — an old and established group who subsisted by hunting and a new community of agriculturalists (Bergstøl 1997, 83). In this phase, the agricultural population which was quite small used hunting territories to a limited extent. Towards c. 950 CE a new economic system seems to have been introduced. In the Gråfjell area, hunting ended and there are traces of both fixed and temporary settlements in the forests (Amundsen 2007). It is assumed that the groups of hunters gave up these areas and left the woods for the benefit of new activities (Narmo 2000).

The reason for this dynamic change in the establishment of settlements and exploitation of resources can likely be found in colonization occurring during the Iron Age. Farms with its roots in an agrarian society can be traced back to the early centuries BCE, where traces of pasturing and cultivation, together with cooking pits, bloomery sites, and hunting pits, represent the wider activities and settlement area of an agrarian population rather than a hunting one (Rundberget 2016). As shown above, it is concluded that from the Late Neolithic and the Bronze Age a separation into two traditions was under way, with a specialization in agriculture in the south-western areas and a specialization in hunting in the north-east. The eastern valleys appear in this view as a contact zone in which both agriculture and the hunting culture made use of accessible resources. There is a clear boundary of southern Scandinavian material along the River Trøsul, meaning that Rendalen has to be perceived as a boundary area. Settlement or settlement-related traces in Åmot also show that conventional farming was not the only method of subsistence, rather, that these settlements used the forests and pastures as key resources.

Conclusion

A long timescale is presented in this study. During a period of more than 3500 years, from the Late Neolithic to the Medieval Period, we have characterized several contrasting regions and activities within the borders of present day Hedmark. The regions follow large landscape formations, but also cross natural landscape borders.

How can we understand the diverse patterns discussed in this chapter? The landscapes, with natural borders and different natural conditions, were fundamental to life in the past and therefore a major factor in influencing long-term historical developments. A plausible interpretation of the regional contrasts would be that food production strategies, primarily the main differences between agriculture and hunting, as well as industries like iron production and extensive hunting of elk and reindeer, led to specialization and to contrasts between different groups of people. The knowledge and use of landscapes were transformed as part of these processes.
From the first occupation and through the centuries, different landscape zones with varied conditions for subsistence were selected for settlement and other activities. Over time, these areas evolved and changed. The hunter-gatherers in the Late Neolithic and the Bronze Age as well as the later specialists of elk and reindeer trapping had their preferences for hunting fields in the forests and mountains. When iron bloomery practices began, settlement increased, and a new and contrasting production-consumption system was established in the eastern valleys. However, this system never spread to the east or to the west of the large rivers in the region. This is probably a result of the region's development over a long time, where both the north-eastern and the south-western regions seem to have a better established and stable society compared with the central contact zone, especially the eastern valleys. Here, material culture suggests changes and disturbances throughout the Iron Age, and it is probably in this vacuum that it became possible to establish a new society based on a large-scale utilization of valuable natural resources and the exchange of goods.

The study area of Hedmark represents one of several border zones in the interior of Scandinavia. The past tells us that changes and tensions in relation to identity, borders, and regions are, obviously, common processes in human societies across all times.

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5. Lithic Production in Bronze Age Norway

The Legacy of a Neolithic Mosaic

Introduction

A dominant research theme of the Late Neolithic and Bronze Age periods (c. 2350–1800 and 1800–500 BCE) in Norway is the development of agricultural practices and the use of metal. However, the archaeological record also shows that there were continuous traditions of lithic production, hunting, gathering, and fishing across Norway. Does the archaeological material support a developing cultural dualism in this period? Can a Nordic Bronze Age hunting society be distinguished based on lithic production and raw material preferences?

There is no doubt that profound changes in the archaeological record took place at the onset of the Late Neolithic. Scholars have argued that this is caused by the migrations of a Bell Beaker elite from Jutland in Denmark to the south-western part of south Norway (Prescott 2012a; 2009; Prescott, Sand-Eriksen, and Austvoll 2018). Their expansion and success were facilitated by their ship technology, an agriculturally based economy, and knowledge of metallurgy. Prescott and Glørstad (2012, 4) argue that the allure of new technology with regard to seafaring vessels, metal, architecture, agriculture, and flint technology enticed the local inhabitants of south Norway into joining the brand-new world. Within this framework, the prevailing grand narrative of the Late Neolithic and Bronze Age has become southern Norway’s process of becoming ‘European’. That is, the region became part of the social-political networks of the European, agriculturally based, Bronze Age world (e.g. Kristiansen 1998; Prescott 2009; Prescott and Glørstad 2012; Prescott 2012a; Prescott, Sand-Eriksen, and Austvoll 2018).

Inherent in this explanation model of the Late Neolithic transition, immigrants from the farming-based society are the active agents; they are the entrepreneurs and the driving force for societal developments. However, considering the growing body of evidence of persisting practices of hunting and fishing across the region of southern Norway, including an upsurge of quarrying activity in the Late Neolithic and Bronze Age, I approach the development from another angle. Together with ideas and terms borrowed from postcolonial theory (e.g. Said 1993), I will suggest an alternative understanding of the Late Neolithic and Bronze Age developments, to which the Early and Middle Neolithic background in south Norway is key. I will begin by outlining the archaeological material and the profoundly fluid and heterogeneous social landscape of the Early and Middle Neolithic periods (c. 4000–3300 and c. 3300–2350 BCE) in south Norway (Fig. 5.1).

The Early and Middle Neolithic Background

In the 1990s, Christopher Prescott (1996) challenged the idea of whether there had been a Neolithic at all in Norway because so many Neolithic elements were missing until the onset of the Late Neolithic and Bronze Age. Compared to southern Scandinavia, Norway in general shows a chronological delay in agricultural indicators. Whereas there is evidence in south Norway of incipient vegetation clearance from the Early Neolithic onwards, as well as some proof of sporadic pockets of agricultural practices in the Middle Neolithic, regular crop growing and animal husbandry only develops from the Late Neolithic (Hjelle, Hufthammer, and Bergsvik 2006; Hjelle and others 2018). Hence, instead of being an agricultural transition, the onset of the Neolithic is marked by

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1 The term is ambiguous. It is often linked to agricultural practices and associated material culture, contrasted by being the chronological name of a period, which lasted from c. 4000 to 1700 BCE in Norway.
local and regional changes in material culture (e.g. Olsen 1992; Nærøy 1993; Bergsvik 2002b; Nielsen, Persson, and Solheim 2018).

The period from 4000–2000 BCE has instead been called an ‘artefactual Neolithic’ (Rowley-Conwy 1993, 350). Elements from southern Scandinavian Funnel Beaker, Corded Ware or Battle Axe cultures are found with varying frequency. Artefacts include four-sided polished flint axes, battle axes, pottery, and point-butted axes, although the latter were made of local rock (Hinsch 1955; Olsen 1992; Åstveit 1999; Bergsvik 2011; Hallgren 2012; Glørstad 2012b). Only five Early/Middle Neolithic dolmens are known, all of which have been found around the Oslofjord area in south-eastern Norway (Østmo 1984), and no longhouse types similar to those in contemporary southern Scandinavia have been found. Hence, the relatively low and variable frequency of these elements across south Norway indicate variation in their integration and appropriation in the local hunter-gatherer-fisher societies. Around 4000 BCE, there are also marked changes in local lithic technology when ground slate tool technology was introduced from the north. On the west coast, the characteristic Vespestad and Vestlands adzes (short, four-sided stone adzes) replaced previous axe types and cylindrical blade technology emerged (e.g. Olsen 1992). While there is clear evidence of the reuse of imported flint axes as raw material for blade and flake production, people also used beach flint and local fine-grained rock types (e.g. Bergsvik 2002a; 2006).

Around 2350 BCE there is a marked change in the archaeological record with the introduction of bifacial lithic technology and new tool and house types (Prescott 1996; 2005; 2012a). There is also a major rise in evidence of pastoralism and crop growing (Hjelle and others 2018). Together, these imply a large-scale societal change. Prescott (1996; 2009; Prescott and Glørstad 2012) describes this as the Neolithic package arriving in Norway with the Bell Beaker culture. Hence, 2350 BCE marks the threshold and final breakthrough for agricultural practices as the economic and social foundation of society, and the start of the period that takes the region into the Bronze Age. However, as outlined, the archaeological record shows there had already been direct and indirect contact with external southern Scandinavian farming-based societies from around 4000 BCE. We must assume that this contact also had an impact on societal and technological innovations and demographic developments. This process created the foundation for the developments instigated as the Bell Beaker groups arrived at the Norwegian coast around 2350 BCE.

Signs of fluctuating demography in the Neolithic have been explained by a shifting economy, correlating climate changes, and introduced plagues (Yersinia pestis) (Nielsen, Persson, and Solheim 2018). There are also other preconditions that would have influenced the social and historical developments in the Late Neolithic. For instance, the success of any agricultural activity is dependent on favourable local climate and topography; geographical proximity to the suppliers of import goods and domesticates would also affect the design and operation of social networks in different regions. Furthermore, as a result of regionally varying socio-political strategies for handling external impulses, the archaeological material

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2 At the end of the last Ice Age, drifting icebergs, originally attached to glaciers in flint-rich areas further south-east, stranded, melted and left their cargo of flint along the beaches; hence the colloquial name beach flint.
Researchers working in northern Norway argue the benefits of viewing local communities as robust, dynamic, interacting, and transmitting, that is, new impulses are integrated or discarded within local contexts in order to make the unfamiliar meaningful and acceptable (Skandfer 2012, 134).

The outlined developments in the Early and Middle Neolithic set the scene for the varying local and regional conditions and social setting prior to the changes occurring after 2350 BCE. The social landscape of the Early and Middle Neolithic had been in continual flux, and the conditions, social mechanisms, and strategies for change had shifted accordingly. As I will return to, the inhabitants of these communities comprised active agents, not passive recipients who active agents had chosen, selected, and discarded elements from the so-called Neolithic repertoire, thus laying the foundations for the Late Neolithic transition. Moreover, perhaps the resilience of local agency is why lithic production, hunting, fishing, and gathering continued to be an important aspect of society even into the pre-Roman Iron Age across Norway.

**Late Neolithic and Bronze Age Lithic Studies in South Norway**

Lithics studies from the Late Neolithic and Bronze Age in Norway have predominantly focused on the lithic icons of this time period. These are bifacial flint daggers, flint sickles, axes, scrapers, and discs made from high-quality, imported flint from southern Scandinavia (e.g. Scheen 1979; Apel 2001). They are beautiful and impressive pieces of work, and in south Norwegian archaeological contexts, often interpreted as symbols of status or rituals, deposited in profane hoards, sacrificial deposits, or as grave goods (Mandt 1991; Apel 2001; Nyland 2006).

That flint was highly regarded as a raw material is also indicated by nodules and pieces of such being found in hoards (e.g. Mandt 1991). Through association with the Bell Beaker culture and Northern European Bronze Age farming and metal-using societies, the imported flint and flint tools have come to represent the consolidation of social relations between Norway and the continent; but what about local lithic production?

While production sites for flint daggers in south Norway are few, perhaps even non-existent, sites demonstrating arrowhead production are plentiful. An important early technological and chronological study of bifacial arrowhead typology was undertaken by Prescott (1986). Based on finds at sites in mountainous regions in the inner part of the Sognefjord, Prescott (1986) described the points’ morphological developments from the start of the Late Neolithic and continuing into the pre-Roman Iron Age. The execution reflected the work of highly skilled knappers in the Late Neolithic, but as Prescott (1986, 153–54) describes it, also a gradual deterioration of skills to poor craftsmanship in the latest phases.

The developed typology concurs with the southern Scandinavian one. That is, at the onset of the Late Neolithic, there are classical Bell Beaker barbed points with tangs of flint, as well as the so-called heart-shaped points (barbed bifacial points without tangs, but with a strong concave base). The classical Bell Beaker points are part of what is considered ‘true’ bifacial technology (Apel and Darmark 2007; Apel 2012). In the Early Bronze Age, points of this southern tradition became more leaf or drop shaped, with convexly curved and later straight bases. The main development of this typology was confirmed by a more recent study of bifacial points found in radiocarbon dated contexts in south-eastern Norway (Mjærum 2012). Mjærum (2012, 127) distinguishes between seven types, where an elongated lanceolate shaped type of point with a straight base (named type G). This type is considered by Apel and Darmark (2007) to be part of a north-easterly tradition. These points are all made of quartzite. There is some spatial separation between types considered to be from a southern tradition and type G, but they are also found together where arrowheads are interchangeably made of flint and local raw materials (Apel and Darmark 2007; Mjærum 2012).

This division between the use of flint and the use of quartzites, combined with more frequent finds of arrowheads in the mountainous and inland areas, is part of an old argument where lithics have been associated with a diverging part of the dominant agriculturally based population (e.g. Hagen 1983; Kristiansen 1998). Hence, while large imported flint tools and flint nodules represent farmers, or people with strong southern relations, the use of quartzite is associated with a demarcated hunter-gatherer inland population in the mountains and further north (Amundsen 2012; 2017; Mjærum 2012).

The tendency to separate groups based on lithic production and raw material use has had perhaps unintended consequences. Not only does this perspective have deep roots in cultural-historical archaeology, but because of this, Bronze Age sites in the interior or mountainous regions with lithic production have in this way come to represent a socially, politically, and geographically defined group, living at the margins of the more dominant agrarian-oriented society. Hence, an image of ‘the Other’ has
been created and is maintained. However, the type of rock and continued lithic production do not necessarily support such a division. As I will expand on in the final part of this paper, variations in the use of different rock types were probably a result of changing lithic procurement practices, not ethnic affinity in the Bronze Age.

**Hunting and Lithic Production — Significant Traditions in the Bronze Age?**

In south Norway, there are numerous open sites, pit dwellings, and rock shelters — located inland, in mountainous areas, and along the coast — demonstrating local lithic production (e.g. Waraas 2005; Eilertsen 2009; 2010; Skjelstad 2011). The extent of these sites points to lithics, with marine and terrestrial hunting, as well as fishing and trapping traditions, continuing to be a valued necessary resource — even within the developing farming-based society at least into the Early Iron Age. Compared to southern Scandinavia, southern Norway lacked metal. Hence, lithic production and procurement would have represented a fundamental skill and resource. Lithics enabled the exploitation of a broad variety of resources, increasing the chance of survival in the often less than farming-friendly environment of coastal western Norway in particular. Anfinset (2017) has employed theories of how varying ecological preconditions and circumstances may have led to social inequalities in Scandinavian Late Neolithic and Bronze Age societies. Preconditions, such as Norway — even today — having only 3 per cent arable land, restrict the possibilities of a political ecology and the development of institutional structures. However, this can be compensated for by economic and technological innovations (Anfinset 2017, 153). Should local lithic production then be regarded a characteristic element of the Nordic Bronze Age in general? Knowledge of lithic technology could be perceived as an element that enabled easy access to resources, hence compensating for the ecological and topological limitations.

Despite regional morphological and chronological variations, the technique applied in point production in general becomes gradually less refined over time. There can be many reasons for this, but the tradition of making points out of rock continued into the Early Iron Age across south Norway. In addition to points, mace heads and small expedient tools were locally produced. As pertains to the latter, a new type was recognized at the small open site Nøklegård, in the county of Vestfold, south-eastern Norway (Jaksland and Kræmer 2012), hence the name Nøklegård point. These points, or tools, are small (> 3 cm) flint flakes with bifacially retouched ‘spikes’, notches, and pegs. The Nøklegård site was dated to 1910–1745 cal. BCE (Jaksland and Kræmer 2012, 200). The people inhabiting Nøklegård also knew the true bifacial technology, indicated by a fragment of a flint dagger type IC also recovered at the site, but the presence of the Nøklegård type demonstrates a flexible attitude to technology and an ability to adjust it to suit one’s needs. The Nøklegård type of point has later been recorded at other coastal sites from the same time period in other regions (e.g. Sørskog, Lempääläinen-Avci and Lechterbeck 2017; Darmark 2018).

The identification of expanding agricultural practices, the establishment of the historic farm with its three-aisled houses, animal husbandry, and crop growing, as well as tracing the incipient metallurgy have been prioritized in Bronze Age research in south Norway (e.g. Prescott 2005; Børheim 2005; Melheim 2012). Despite their numbers, the perhaps unimposing open sites related to hunting, trapping, or fishing have thus received little research attention. This dominant emphasis on agricultural development has been deemed Neolithic chauvinism by some (Olsen 1988; Zvelebil 1996), where Neolithic equals farming.

Poor preservation conditions, and therefore low representation of organic material, can influence our regard of the role of wild game in farming societies. An example from Rogaland County in south Norway illustrates this with the discovery of deer bones preserved in a ritual context (Meling 2020). Rogaland is known for its monumental grave mounds, sacrificial hoards including metal objects, Bronze Age rock art, and early evidence of crop growing and husbandry in connection with two- and later three-aisled houses. Nevertheless, a recent excavation in the municipality of Sola of a ritual deposition in a primarily agricultural context implies that game was also an integral part of ritual or cosmological mediations, so far unrecognized. At the site, deer bones were preserved, carefully placed in two small cairns. The bones were dated to the Younger Bronze Age / Early Iron Age. The find is interpreted as a mediation of the importance of game and hunting, the ritual construction being the means of keeping balance between the wild and the domesticated in a landscape in constant transformation (Meling 2020).

The procurement practice of lithic raw material appears to become increasingly pragmatic into the Bronze Age and Early Iron Age. Lithic assemblages comprise mainly small tools made of beach flint (e.g. Eilertsen 2009; Sørskog, Lempääläinen-Avci, and Lechterbeck 2017), perhaps imported flint tools.
5. Lithic production in Bronze Age Norway

but equally often tools made of quartz, quartzites, or other local rock (Nærøy 1994; Bergsvik 2002a; Eilertsen 2010). Whereas people of the western coast had previously been mainly a coast-bound semi-sedentary population, they started to settle at the heads of the fjords from the Late Neolithic transition onwards (Bergsvik 2002b; Olsen 2012). Since beach flint is predominantly a coastal phenomenon, this relocation of settlements can explain the ensuing upsurge in fine-grained quartzite quarrying in the mountainous regions and coastal or fjord hinterlands (Nyland 2016a). From the heads of the fjords, the distance to mountains rich in resources is shorter, making the inner fjord areas potential nodes for accessing a greater variety of resources. Sites along the shores of river systems and lakes surrounding high mountain quarries, demonstrate the wide application of quartzite in the Late Neolithic and Bronze Age (e.g. Bjørø, Kristoffersen, and Prescott 1992; Arskog and Åstveit 2014). However, there is no evidence of the long-distance distribution of rock during this phase that one finds in earlier in the Neolithic. This tendency is the same as is found in inland central and eastern Norway; that is, in the Late Neolithic and Bronze Age the frequency of use is reduced proportionally with the distance from exploited deposits (Lannerbro 1976; Nyland 2016b). Hence, if local procurement and utilisation define lithic production in these time periods, we should be cautious in linking arguments of cultural or ethnic affinity to rock type. The use of local rock is instead a sign of a continued exploitation and perhaps importance of inland and mountainous resources.

Rock and New Technology as Mediators Between People?

Distribution patterns of lithic raw materials sometimes identify social contact at considerable distances. Similarly, the spread of technology can imply social contact and knowledge transmission between people of varying geographical origins. Contrary to, for example, Great Britain, bifacial surface pressure flaking was introduced in south Norway in the Late Neolithic. This rapid replacement of the previous blade-based technology for making flake and blade tools has been argued as one of the strongest signs of a dominant Bell Beaker influence around 2350 BCE (e.g. Prescott 2005; Glørstad 2012a; Prescott 2012a; Apel 2012).

Apel and Darmark (2007, 37) argue that to make flint daggers using the true bifacial technology, access to an extensive flint source and training by a master flint-knapper was required. However, a type Ib dagger (first determined by Scheen 1979) made from quartzite (Fig. 5.2) was recovered at a campsite a kilometre or so from Femundsåsen, a large quartzite quarry located in central Norway (cf. Nyland 2016a; 2016b). The quarry was established in the Late Neolithic and its exploitation continued into the Early Iron Age (Nyland 2016a, 156). The quartzite’s matrix is relatively heterogeneous, varying from fine grained to coarse. Thus, the making of the lanceolate dagger in such unpredictable raw material must have required extraordinary skill, exemplifying a solid mastering of the introduced bifacial technology (Nyland 2016b, 130). In the vicinity, there are also sites with broken preforms, so the dagger does not seem to be a unique occurrence. Another example of what, in my opinion, illustrates merging of cultural horizons and knowledge transmission is found in the mountain region closer to the western coast. There, heart-shaped points, also considered an early Late Neolithic type, were made of both flint and quartzite at the same sites (Bjørø, Kristoffersen, and Prescott 1992).
Figure 5.3. The coast and fjord landscape of western Norway (photos by Astrid J. Nyland).
At the Femundsåsen quarry, flakes of high-quality flint have also been observed. To find flint in this context is extraordinary, not only because it was found in a quarry, but also since the examination of assemblages at 150 sites in the vicinity of the quarry resulted in almost no such finds (Nyland 2016a). Instead, different high-quality, fine-grained quartzites were utilized in this area. Finding these flint flakes in an area rich in quartzites is therefore intriguing. In the interior and mountainous regions, there are evidently plenty of alternatives, so to bring flint to these areas is like bringing coal to Newcastle. Choice of raw material therefore appears to be cultural; perhaps flint was the familiar element in an otherwise unfamiliar social, topographical or lithic landscape (Nyland 2016b, 132)? Apel (2001, 317) has suggested that the flow of flint daggers crossed east and over from the coast of central Norway to the coast of Sweden in this region, hence passing the area of Femundsåsen. The quarry may then have been visited seasonally as a part of the exploitation of these resources at a certain time of the year, and it may have even functioned as a social arena (Nyland 2016b, 130). The conjecture of elements, that is the bifacial technique and the variety of raw materials, brought together at this point in time and place, serves as an example of the merged horizons and cultural mosaics that occurred during the Late Neolithic and Bronze Age.

Returning to the narrative of the Late Neolithic transition, do these presented sites and examples add to our understanding of how the transition was experienced and came to pass? Arguably, the Bell Beaker immigrants first arrived in the districts around Lista, in Vest-Agder County, and moved north-west, to the coast of Rogaland County (Prescott 2012a; 2012b). North of the Boknafjord (see Fig. 5.1), the coastal topography differs radically from the beaches and flat rolling moraine hills of Jutland and the area around the Limfjord in Denmark. Hence, as the Bell Beaker groups moved north along the western coast, they steadily moved into regions with little arable land, an archipelago of rocky islands, and steep mountain sides lining the fjords (Fig. 5.3). Moving north, they also increased the distance between themselves and their Danish source of flint. Hoards and deposits show that people brought with them readymade flint tools, but did they also bring nodules from the Jutland’s flint mines? If one needed high-quality flint to teach and learn the technology, would this have been a priority? The rapid use of local raw materials may perhaps indicate another scenario where learning went both ways. That is, the newcomers needed to learn where to find, and how best to procure, local raw materials for their everyday tools. Although the deposits mostly comprise flint daggers, sickles, spoon shaped scrapers, and flint discs, a quick search through the museums’ databases demonstrate that arrowheads are in general the most widespread tool type found. Local knowledge of suitable alternative deposits would have been required and was, apparently, offered.

Changing Ideas Related to the Significance of Rock

Sometimes it is not necessarily the tool type or shape that matters, but more so whom a tool type or lithic raw material is associated with, including its provenance. The identification of varied practices indicates that raw material preferences were entangled in cultural traditions, ideas of affinity, and thereby social interactions between people (Nyland 2016c). During the Early Neolithic, the distribution of rocks in south Norway implies that provenance, sometimes from particular quarries or from specific areas, mattered more to people than its availability. For example, in the Early and Middle Neolithic on the western coast, rhyolite quarried atop Mount Siggjo was distributed into areas on the west coast where other suitable rock was available (Bergsvik 2006; Nyland 2016c). In south-eastern Norway, an apparently similar value seems to have been ascribed to southern Scandinavian flint. Entering the Bronze Age, similar sentiments ascribed to rock seems to fade. Instead, the type of rock used on an everyday basis appears to have become a question of local availability and accessibility. Consequently, in the Bronze Age, cross-regional procurement practices imply that a specific type of rock signalled neither ethnic or cultural preference, nor affinity. Bronze Age sites across south Norway demonstrate that points were interchangeably made of both quartzite and flint (e.g. Gustafson 1978; Bjørgo, Kristoffersen, and Prescott 1992; Eliertsen 2009; Damlien 2011), apparently depending on availability, not cultural preferences. Hence, it cannot be argued that there

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3 These finds were found in 2015 by students on an MA excursion led by Dr. Silje Fretheim from the University Museum, Norwegian University of Science and Technology in Trondheim. The flakes were photographed using a mobile phone and sent to the present author. Unfortunately, these finds were not collected, and the quality of the image is not high enough for printing, but see Nyland 2016a.

4 E.g. museum no. C25825: a deposit of a flint dagger, spoon-shaped scraper, flint disc and pottery; mus.no S3309: a hoard of two daggers and 39 flint discs; mus.no B11342: 28 flint discs wrapped in birch bark.
was a separation between inland, so-called Arctic, or north-eastern hunters using quartzite and coastal Nordic Bronze Age farmers with southern connections using flint.

However, the use and distribution of raw material changes over time and between regions; this can be informative when defining social territories. Tool morphology and typology can change too, but like Marcel Duchamp’s work of art Fontene, meaning or significance do change with social context. An example to consider is how flint daggers and their varied depositional archaeological context changed during the course of Late Neolithic and Early Bronze Age (Nyland 2006). Along the west coast, lanceolate daggers type I–III are more often than not found deposited together in ritual hoards, in pairs or more, in (more or less) pristine condition. The more elaborate ‘fish tail’ daggers, type IV and V, are infrequently found and appear to have been deposited alone and more frequently higher up in the terrain (Nyland 2006). This pattern is again contrasted by the type VI daggers dated to the Early Bronze Age that were deposited scattered across the landscape (Nyland 2003, 86–91). Daggers type VI have also often been re-sharpened or have traces of use as flint for fire starting (Scheen 1979), indicating a change in use compared to the older types. The changing contexts and depositional practices indicate a change in significance between the earliest and latest type of flint daggers over time (Nyland 2006). Arguably, this reflects the changing social context, of which the daggers were part. That is, in the Late Neolithic, value may have been based on associations with the newcomers and their new traditions, and to express social bonds, status, and power, the daggers were deposited in hoards or in other expressional contexts. In the Early Bronze Age, daggers seem to have become personal items for everyday use and were buried with the owner upon death, thereby representing something else than the previous dagger types.

**Alternative Perspectives on the Process of Becoming ‘Neolithic’**

Throughout the Neolithic, the archaeological material in south Norway indicates a constant flow of impulses that were dealt and engaged with in various ways. The period may be described as a period of ‘adoption and adaptation’ (Sheridan 2013, 59); the introduction to new impulses is followed by a period with a strong localising tendency. The social landscape in south Norway at the Late Neolithic transition comprised a heterogeneous hunter-gatherer-fisher and incipient farmer population. Shifting technology, the changing morphology of tools, and indeed the few agricultural indicators that exist point to societies that chose different social strategies in their engagement with external impulses, already from the Early Neolithic onwards (Nyland 2016c, 130–31). The material indicates a mosaic, a patchwork of different lifestyles, with selected elements and enclaves of incipient farming and husbandry, as well as groups supported mainly by terrestrial and marine hunting, trapping, gathering, and fishing.

One of the instigators of postcolonial theory, Edward Said (1993, xxix), underscored how cultures or societies comprise varied assortments of elements, or assemblages, due to the uniqueness of contexts and participants: ‘[…] all cultures are involved in one another; none is single and pure, all are hybrid, heterogeneous, extraordinarily differentiated, and unmonolithic.’ In other words, the consequence of a perspective acknowledging the creole or hybrid nature of all cultures, is material heterogeneity (Gosden 2001, 243; Fahlander 2005, 206). In the Neolithic, the varying material culture represents people’s deliberate choices of whether or not to engage with external people, impulses, or elements, or their degree of interaction. Acknowledging that choices are socially situated and that strategies develop in accordance with the socio-political history of an area or region, the assumption that one may transfer a system from one area to another, resulting in a copy of the original, is problematic. One should therefore not search for a Neolithic package or a predefined Nordic Bronze Age society based on the presence of certain elements characteristic of the dominant culture in southern Scandinavia or continental Europe. Instead, it is important to acknowledge the growing body of evidence for lithic production in particular across south Norway, when developing theories and explanation models for the period; it is equally important to recognize the societal or demographic mosaic that the historical processes prior to the Late Neolithic transition had created.

Thus, the seafaring immigrating Bell Beaker groups from Jutland entered a profoundly heterogenic social landscape. Was it then, like the current dominant explanation model for the Late Neolithic transition suggests, through force (Prescott 2012a, 120), or a type of ‘pomp and terror’ strategy (Glørstad 2012a, 95), that the Bell Beaker immigrant farmers, warriors, and entrepreneurs, driven north in quests for riches, pushed and persuaded the existing local communities to adopt the Bell Beaker package? The prevailing argument is that this started the process of south Norway’s process of becoming European (Prescott and Glørstad 2012; Prescott 2009; 2012a;
Glørstad 2012a; Prescott, Sand-Eriksen, and Austvoll 2018); social relations to the Bronze Age centres in Northern Europe were established and consolidated. Furthermore, the south Norway that became part of the Nordic and Northern European Bronze Age world was fundamentally orientated towards agriculture. However, the relation between existing local communities and the immigrating Bell Beaker people at the onset of the Late Neolithic is, in this model, inherently one of immigrant domination. This kind of narrative, of the strong group, a state or empire claiming territories and resources at the expense of subdued natives, is a familiar one in European history (Said 1993, 5–9, 93).

In Neolithic to Bronze Age Norway, the local inhabitants who continued to hunt and fish are, more often than not, presented as passive recipients of the onslaught of impulses and ideas at the Late Neolithic transition. In postcolonial terms, the hunter-gatherers become the subaltern, an unprotected group as their influence is rarely considered part of the dominant social networks or institutions. As a result, the hunter-gatherers lose their agency in the Late Neolithic and Bronze Age. They are portrayed as silent suppliers of goods that the socially active farmers infused into their southern networks, and indeed regarded as commodities themselves (Ling, Earle, and Kristiansen 2018). Consequently, the idea of cultural dualism has persisted, in association with groups living on the margins of the hierarchically dominating farming society. Could this marginalisation have also caused Bronze Age lithic production to be less explored? If so, we need to be aware of this and we need to change our perspective.

Final Remarks

In Neolithic and Bronze Age research in south Norway, alongside material culture of southern Scandinavian origin, identified agricultural practices have historically held the power of definition and thus set the agenda for how this period has been studied. Agricultural indicators, tools, and technology found in Scania and Denmark have even served as the defining elements for the chronological sequencing of the Neolithic in Norway. However, problems arise if a period or type of society is defined based on the material culture of a certain cultural group and by what is expected to be present based on what you find in the area of origin, in this case, southern Scandinavia or continental Northern Europe. The grand narrative of the Late Neolithic and Bronze Age in south Norway, describing the process of becoming part of the social-political networks of a European agricultural- and metal-based Bronze Age World (e.g. Kristiansen 1998; Prescott 2009; 2012a; Prescott and Glørstad 2012), is indeed an important field of study and vital in the region’s history. Still, with its dominance comes the danger of the Late Neolithic and Bronze Age in Norway being defined by what people were lacking.

Approaching the Late Neolithic transformations from a postcolonial perspective (e.g. Said 1993; Gosden 2001; van Dommelen 2011) renders visible an embedded rhetoric or discursive bias in the dominant explanation model, favouring migration of agricultural societies as the dominant drivers of change. In this respect, the portrayed Late Neolithic situation is a classic example. The model portrays a dominant group that moves long distances seeking new territories and resources, settling and inevitably subduing or marginalising the natives. To quote Said (1993, 8), such situations are not simply acts ‘of accumulation and acquisition […] but impelled by impressive ideological formations that include notions that territories and people beseech domination [...]’.

As described in this article, the varied archaeological material across south Norway tells a Neolithic history of continuous encounters between people with various subsistence practices, geographical origins, and assumed cultural affinities. This resulted in a fluid and complex social landscape already in flux and a state of change at the onset of the Late Neolithic. In my opinion, this alters the point of departure for understanding subsequent societal developments. It allows for societies shaped by active integration of external elements, as well as the continuation of existing traditions related to the exploitation of coastal, terrestrial, mountain, and inland resources. If we accept that the local inhabitants had encountered farmers and domesticates prior to their first encounters with Bell Beakers, this could have provided the necessary familiarity needed for both sides to overcome the sense of the other’s alterity (as used by Alberti in Alberti and others 2011, 901), that is, ontological difference. In the Bronze Age, the skillset comprised traditions from separate systems of knowledge and was a characteristic feature of Bronze Age life in general. Lithic production should therefore be regarded a characteristic element of the Nordic Bronze Age, not as part of a separate group of marginalized hunters north-east, inland, or in the mountains.

To be able to obtain furs, pelts, and antlers, arguably desired goods in the Late Neolithic trade networks, the Bell Beaker entrepreneurs needed to familiarize themselves with a new steep and rocky landscape. Local knowledge and skills, including
access to good hunting grounds, safe passes in the mountains, where to find the best summer pastures, and where to find high-quality lithic raw materials, would therefore have been both valued and necessary to the immigrants. With knowledge, comes power — leverage — something for the local inhabitants to bring to the table and a reason for the newcomers to cooperate with locals, so as to be able to exploit all available resources. Such a society did not necessarily rely solely on hegemonic power structures of a colonising group, or on the material culture of southern Scandinavia.

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M. PILAR PRIETO-MARTÍNEZ

6. Places to Be, or Places to Live?

Transformations in Prehistoric Dwellings in the North-Western Iberian Peninsula

Introduction and Preliminary Approach to the Study of Houses in Galicia

Houses are physical structures, but they also refer to symbolic, ideological, economic, and political aspects of a society (Artursson 2009). European dwellings appear very clearly in the archaeological record, with different shapes and materials used for building their walls, and with different types of roof structures. Their size and internal organization vary considerably according to the region and the historical period in question. The house is a particularly important type of architecture in settlements; as well as being the backdrop for the daily life of a family, it can also be the focal point for the social activity of a community. As an element of material culture, it is actively used to express differences from a sociocultural point of view; it can also be used to transform society in a desired direction, both to legitimize a situation of new power and to oppose new changes that are emerging (Artursson 2009, 237–38). A new social model emerges in the Bronze Age in Galicia, and a number of visible transformations can be identified through the study of this material. A comparative and diachronic study will make it possible to define the changes that took place more clearly, and to understand them from a social or economic perspective, as has been demonstrated in other regions, e.g. in Scandinavia (Artursson 2009). An attempt to identify relevant patterns in wider contexts in prehistory will provide us with a better understanding of the Galician case, and also broaden the continental perspective (Prescott and Glørstad 2012).

The first prehistoric open-air settlements in Galicia were discovered and excavated in the 1970s. However, the first research projects aimed at identifying and excavating prehistoric settlements were not carried out until the 1980s, taking place in the mountain range of Bocelo (Criado-Boado and others 1991), and the area of A Baixa Limia (Eguileta 1999). With the arrival of preventive archaeology in the 1990s, a large number of sites in the region began to be discovered. At the start of the twenty-first century, summaries were published of the Morrazo Peninsula (Criado-Boado and Cabrejas 2005) and Ulla-Deza area (Prieto-Martínez and Criado-Boado 2010), resulting from a series of projects carried out during the construction of a motorway (Fig. 6.1). Only a few studies that focus on the house as a significant architectural element have been published over the last decade (Prieto-Martínez and Salanova 2011; Prieto-Martínez and others 2012; Nonat, Vázquez-Liz, and Prieto-Martínez 2015; Vázquez, Prieto-Martínez, and Núñez-Jato 2015; Prieto-Martínez and Díaz-Rodríguez 2017). These studies are generally descriptive, as they are a result of a limited archaeological record, partially published, and often inaccessible. In the north of Portugal, while there are apparently fewer catalogued sites, there are more studies published on excavations carried out over large areas, which make it possible to deal with problems that still cannot be studied in Galicia, such as the internal organization of these settlements, or the presence of different functional areas. Jorge (1988; 1994), Sanches (1997), and Bettencourt (2000a; 2000b), have all published extensive and detailed monographs, which have been essential in reconstructing the prehistory of the North of Portugal.

It could be considered that the study of the house in a small region such as Galicia, with a scarcity of information available, is not especially significant for European prehistory. However, this preliminary synthesis offers a microhistory that runs in parallel...
to the different regional microhistories of the continent. Furthermore, it may encourage interpretations of the house in terms of social differences. The Iberian evidence can also contribute towards answering similar questions in Scandinavia, as changes in domestic architecture can be observed over time in Galicia, in the same way as in Scandinavia and Northern Europe. Comparing the progression of these formal and technological changes, as seen through the development of Galician houses, could make it possible to explore the idea of cohesion on a continental scale.

The shapes and sizes of houses allows us to interpret past societies on a social, economic, and even political scale, as shown by the research of Artursson (2009) in the south of Scandinavia. He focuses in particular on the longhouse as an element that implies a new social order, an axis of social change (a house-based society), interpreting that in southern Scandinavia the gradual development of the large longhouse and more complex farmsteads ‘can be seen as just one part of a set of symbols used to separate the chiefly aristocracy from the lower ranks of society’ and ‘became one of several material representations for this new social and political order, and most likely, this type of building can be seen as a differentiating, corporate body with warriors and specialists attached, used to develop and gradually strengthen chiefly power’ (Artursson 2015, 75–76).

The idea of the longhouse in connection with change is supported by other authors in the region. Armstrong Oma (2016, 17) considers that the models of houses are related to economic strategies based on livestock or cereal crops. Bech and Rasmussen (2018, 46–67) write that architectural changes in the houses are linked to changes in land use and, possibly, climate change. They moreover argue that Bronze Age communities that shared similar environmental conditions also implemented economic strategies that were in some way comparable, applying different solutions in different regions, the evidence of which was the way in which they built their houses. The comparative study between Rogaland and Jutland reveals two regional variations within a commonly shared Scandinavian construction method (Bech and Rasmussen 2018, 46–67). I agree with the idea that agricultural production was an important economic, demographic, and cultural factor in the Bronze Age that contributed towards conceiving a particular type of dwelling. However, this does not explain everything, as other factors, such as those associated with networks of exchange (both of objects and ideas), should be taken into account (Prescott, Sand-Eriksen, and Austvoll 2018, 190).

My aim is to describe the house and settlements in the Neolithic and Bronze Age in Galicia in order to identify the changes they underwent, their chronology, and their interpretation. Although the available
information does not allow for a systematic study, we can propose a preliminary characterization of the house over a period of 4000 years. The comparison with other regions with abundant published information can provide us with a better understanding of the available evidence in Galicia. This study was carried out on the basis of a direct study of a number of sites, and by consulting unpublished excavation reports as well as publications.

A total of 169 sites have been identified, of which ninety have been excavated to different extents, forty-seven of which were occupied at more than one moment in time (identified by 14C dating and/or ceramic typology), and only forty-eight of which have radiocarbon dating. Therefore, few prehistoric sites have been catalogued, and the number of sites with confirmed dwellings is still low (Fig. 6.1). Neolithic and Bronze Age Galician houses are limited to three basic shapes excavated in the C horizon (the soil profile zone between the ground and the bedrock, it may be weathered): rectangular (longhouse-type with foundation trenches with wooden posts, those with only wooden posts, and those made of stone); circular (roundhouse-type with posts or foundation trenches); and oval (with different types of foundation ditches, sometimes combined with posts). Few dates have been extracted from the strata of these houses, and the majority of available dates come from external structures, such as hearths (Fig. 6.8). Using this general classification, I will offer a summary, divided by periods, of the characteristics of these settlements with the focus on their houses.

Settlements and Houses

**Middle Neolithic (4500–3100/3000 BCE)**

The start of megalithic traditions coincided with the beginning of the Middle Neolithic period in Galicia, and it constitutes the only known form of funerary tradition from this period. A total of twenty-one sites have been identified and catalogued during
preventive excavations, which were only recognized once their deposits had been dated. A total of fifteen sites with thirty-seven dates are available: the majority of the structures are pits, grille-type combustion structures, or otherwise stone hearths or fireplaces (Fig. 6.2). Sites with these types of structures are well known from the Early Neolithic throughout Europe (Guilaine and others 1987). There is no clear typological indicator in the domestic sites that allows us to define this period according to its artefacts, either in terms of pottery or stone tools. Neither is there any clear typological indicator in the tombs, as the pottery mainly consists of undecorated globular bowls.

Poorly defined hut floors associated with pits are known from the Middle Neolithic, although these may have been associated with ritual activities, as in As Campurras, where domestic activity (a poorly defined hut floor identified in a test pit measuring 1 m²) is associated with a small menhir supported on the floor between two granite batholiths with rock carvings. Only one other site, in Chan das Pozas, contains a dated sample from the start of the Middle Neolithic, where two hut floors were found; these samples could not be linked to a particular hut, as they were taken from post holes (Bonilla-Rodríguez and César-Vila 2013). There are also two barrows with evidence of domestic activity in the vicinity: the tumuli of Dombate and As Mamelas (13 dates in total) (Cano-Pan, Prieto-Martínez, and Vázquez-Liz 2017); however, the information available is still not sufficient to allow us to understand this occupation beyond the actual funerary spaces.

Sometimes, trenches from Middle Neolithic sites are registered as construction elements delimiting the outside of domestic areas, indicating the start of a period of greater complexity in the settlements when they became increasingly stable. These are linear trenches, akin to palisades, with signs of having contained vertical wooden posts, forming oval structures enclosing large areas (3500–4000 m²) and with openings that may have provided access to the site. Middle Neolithic dates for these palisades are only available for Monte de Os Remedios. Sites of this kind are well known in Europe, from the coast of Brittany in France (Hénaff 2002), to Denmark (Andersen 1997), as well as the interior of the continent (Augereau, Chambon, and Sidéra 2005).

As we have seen, we have still not been able to define house-type dwellings based on the dated structures and on the few materials found in their surrounding areas. The evidence suggests that the settlements were temporary camps during this period. However, the presence of sites with wooden palisades indicates that changes in habitation were beginning to occur in specific areas. I believe that it is only a matter of time before we find well-defined houses in Galicia for this period.

Late Neolithic (3100/3000–2400 BCE)

At this stage, megalithic building continued to develop as the predominant type of funerary architecture. Refurbishments have been detected in tumuli built during the Middle Neolithic, and other kinds of non-monumental funerary structures began to gradually appear, such as pits and cists (Vázquez and Prieto-Martínez 2016). Penha-type pottery are the clearest typological artefacts from this period for all contexts. The Late Neolithic in Galicia largely corresponds to the early and mid-Chalcolithic in the rest of Iberia. The number of sites increases in comparison to the previous period, with at least fifty-three known sites. Although only a few sites have been excavated to any extent, we find greater stability in the settlements (Fig. 6.3), which can be classified into two types.

The largest and best-known group consists of settlements in valleys, probably due to the proximity of arable land. These sites are complex, and we begin to see house-type structures. The settlement space is organized with groups of two or three houses around a central hearth, such as at Requén. The construction systems that would continue to be used throughout this millennium appeared at this stage: small structures were built in different shapes, using posts or trenches with post holes. Apparently, there is a relationship between their shape and size, because the smallest huts are circular (4 m²), those of medium size are oval (between 8 and 15 m²), and the largest houses are boat shaped (around 32 m²). The chronology of the types of huts still needs to be refined, as they are normally not found together at the same site and may thus correspond to different traditions or lifestyles within this period.

At these sites, there are wooden structures that were used to organize internal or external spaces. The clearest example is the enclosure from the site of Montenegro, inside of which are several dwellings. In Europe, large and complex sites begin to appear more frequently from the first half of the third millennium BCE, reflecting the changes that were occurring in society, such as at La Herouma à Pléchâtel (Ille-et-Vilaine) (Tinévez 2004). This is an example of a site with several palisades that surrounded and protected large communal buildings. The so-called ditch enclosures from the Duero valley have a similar chronology from the pre-Bell Beaker Chalcolithic (Delibes de Castro and others 2014),
which despite being much larger, coincide with the Galician Late Neolithic.

The second type of settlement corresponds to ‘hillforts’ located in high areas, and these are the only type of settlement known from this period in the north of Portugal, though they are still quite rare in Galicia. The known examples are found on the banks of the River Miño, close to the Portuguese border, and possibly in the Morrazo peninsula (Mesa de Montes site), although none of them have been dated in Galicia. If they are like the Portuguese sites (Jorge 1994), then we would expect to find walls and stone houses. Therefore, the differences between settlements in valleys and high areas are not only apparent in their topographical locations, but also from their internal organization.

**Early Bronze Age (2600/2400–1800/1700 BCE)**

The Galician Early Bronze Age corresponds to what is known as the late Chalcolithic in the rest of the Iberia. The typological indicator for this period is Bell Beaker pottery, which implies a significant change in the region’s pottery (Prieto-Martínez 2011). Megalithic monuments continued to be used although the funerary model changed, as we mainly see signs of reuse, and it is still not clear whether new tumuli were built. In many cases this reuse can be seen by the presence of a single sherd of pottery in the upper layer of these burials, meaning it is not clear whether their reuse was for funerary purposes in all cases. This said, it does seem clear that these monuments were also significant for the communities. The development of invisible graves, which gradually took shape during the Late Neolithic, became more important during this period, where we can identify grave goods associated with an individual type of ritual, with an emphasis on cist-type burials, although there are some pit graves. A dichotomy was defined in the grave goods: Bell Beaker pottery was exclusively used in the megalithic monuments, while the cists and pits only contained objects belonging to the ‘Bell Beaker package’ (copper daggers, *palmela* arrowheads, or gold and silver adornments) and undecorated pottery.
Here we find a significantly larger number of sites from this phase. There are at least eighty-six sites, but only twenty-three dates provide a radiometric chronology for seventeen settlements. In many cases, only the materials on the surface have been documented, and in some cases the presence of Bell Beaker pottery is minor, revealing the existence of sporadic activities that were only carried out on rare occasions.

The settlements we know for this period are hamlets, typically small in size, which were repeatedly occupied over a long period of time, possibly dozens or even hundreds of years, although we do not know if this was a seasonal or cyclical return due to a depletion of the exploited land (Fig. 6.4). This is probably the result of a mobile way of life, which allows us to recover a larger number of sites that are smaller in size (Prieto-Martínez 2008). These settlements are found in mountainous areas with surrounding wetlands, used for controlling livestock. The most typical site for the region is A Lagoa. In most of the known sites we find an abundance of materials and hardly any associated structures, indicating short and intensive activity (Prieto-Martínez 2011). For example, in A Devesa do Rei, a large amount of pottery was documented, although there are hardly any structures in the excavated area (700 m²) (Aboal-Fernández and others 2005). Due to the special and unique features of the pottery, this site has been identified as having been used for ritual purposes (Prieto-Martínez 2011). In the case of Guidoiro, the dating of the site comes from pottery found in a large mid-den, thought to be associated with a feast related to some of the burials on the island (Rey-García and Vilaseco-Vázquez 2012). In Os Torradoiros there is a large amount of material associated with an area of domestic activity, where copper may have been produced on a small scale, although hardly any structures are preserved (Vázquez and Prieto-Martínez 2016). Finally, deposits from foundation trenches in huts or combustion structures have been dated as belonging to this period, although they cannot be directly related to other chronologically coherent materials, even though these appear at the same sites (Mamelas, Zarra de Xoacín, Sete Pías, etc.) (Fig. 6.8). Sites such as Dombate are dated to the Bell Beaker...
period (Prieto-Martínez 2019), although the period of Bell Beaker activity in the exterior of the tumulus may not be directly associated with the reuse in the dolmen. If we turn to the north of Portugal, Bell Beaker sites as such are unknown, and only a sporadic presence of Bell Beaker pottery has been detected in the Chalcolithic settlements built in the Late Neolithic (Bettencourt 2011).

Focusing on dwellings, we can see a continuation of the construction tradition as the houses were still made of wooden logs, with only post holes and foundation trenches found in the record. However, there is greater diversity in terms of their shapes and sizes, and it seems that the size of houses slightly increased via the hut floors with circular shapes, using posts and/or foundation trenches with a diameter of 7 m², while the oval houses maintained the standard size from the Late Neolithic, between 8 and 16 m² (Prieto-Martínez 2019).

Middle Bronze Age (1800/1700–1300/1200 BCE)

The funerary structures of the preceding period continued in use, with the reuse of Neolithic megalithic monuments, and the development of cist and pit tombs with mainly ceramic grave goods. In this period a new type of vessel, unique to the north-western Iberian Peninsula, was introduced that could be considered a typological indicator for this period: the wide horizontal rim vessel, which was mainly decorated (Nonat, Vázquez-Liz, and Prieto-Martínez 2015). Rock art probably began to be used to indicate explicitly the presence of places of importance for the communities. These places may have been significant in previous periods, as demonstrated by the materials found from hundreds of years of human activity in their immediate surroundings.

The recent documentation of domestic sites has allowed us to increase our knowledge of the period (Fig. 6.5). Today we know of thirty-three sites, nine of which are dated (sixteen dated samples in total). We still do not know the size of the settlements, although they were larger than those that existed previously. Occupation was more permanent, and the houses were larger and more complex, with storage spaces that were separate from the dwelling space (e.g. in Monte das Cabanas, Martín-Seijo and oth-
ers 2017). We also begin to see funerary areas within the domestic spaces (e.g. in Fraga do Zorro, Prieto-Martínez and others 2009), although these are better documented in the north of Portugal (for example at the site of O Pego, Bettencourt and others 2017). They are located in areas that controlled lines of transit, with suitable land in the nearby area for growing crops and keeping livestock. Settlements have also been documented with pits, although these are undated and virtually unexcavated, indicating that there may have been some type of defensive structures in some settlements, such as in the vicinity of Dombate (Prieto-Martínez and Díaz-Rodríguez 2016).

The most significant change is recorded in the settlement — longhouses were introduced, and the existing dates appear to confirm this. The houses were larger (44 m²) and more solid, and differentiated areas of activity have been identified inside them (which were previously absent or not detected), as is the case of O Fuxiño (Vidal-Lojo 2011), and possibly sites such as Agro de Bazán or Lama de Mena, which are currently not dated. At the same time, the previous construction methods continued to be used, as in the case of A Lagoa where trenches and posts are combined (Prieto-Martínez 2011), construction systems that were previously observed in the same house for the external structures.

New types of settlements are documented, with a function that would seem to be clearly ritual in nature. We find activity around petroglyphs, which may have been carved at this time, which is definitely the case of the longhouse measuring 34 m² (10 × 3 m) carved into the rock of Pena Fita (Vázquez-Liz, Prieto-Martínez, and Núñez-Jato 2015). We have yet to find any parallels of longhouses carved into the rock in the rest of Europe.

Therefore, at this moment in time, we can see a diversification in the sites in formal and functional terms, together with a new type of internal organization. Furthermore, the introduction of the longhouse seems to have been very important, as it is recorded in settlements but also in the rock carvings.
**Late Bronze Age (1300/1200–800/700 BCE)**

Burials dating from this period in Galicia are virtually unknown, and the excavation of Ventosíños, a site with a cemetery of pits in one area was only recently published (Piay, Cano-Pan, and Naveiro-López 2015). As in previous periods, megaliths were reused and in exceptional circumstances we find some newly constructed tumuli, smaller than those documented in previous stages (e.g. Devesa do Rei, Aboal-Fernández and others 2005). We also find the reuse of some large storage pits, which could be interpreted as having been a burial (the reuse of large pits, with grave goods but without skeletons, has been documented in the sites of Monte Buxel, Carballeira do Espíritu Santo, and Monte das Cabanas). The typical artefact is still to some extent the wide horizontal rim vessel at the start of the Late Bronze Age, but little by little this disappears, giving way to pottery with clays and shapes closer to those seen in the Iron Age, making them difficult to differentiate without the use of radiocarbon dating.

With regards to settlements, we currently know of twenty-five sites in Galicia, fourteen of which have radiocarbon dates. This is the period with the highest ratio of dated samples per site (thirty-two sites) (Figs. 6.6 and 6.8). We can see a greater diversity of sites, which are larger and more complex than those from the previous stage and are located in a wider variety of locations. There is an assumed intention to control long-distance transit routes by land, such as Sete Pías, or by sea, such as Punta de Muros (Prieto-Martínez and Díaz-Rodríguez 2016). Continuing with the trend from the Middle Bronze Age, the internal organization of the settlements becomes increasingly clear with the differentiation of the housing and the storage areas, regardless of the size of the site. For example, at the site of Sete Pías, only the dwelling area is known, consisting of around 200 m² of longhouses in two different parts of the valley, some 100 metres apart. Then there are sites such as Monte Buxel or Monte das Cabanas, where only the storage area has been excavated. In the case of Monte Buxel, this area covers at least 300 m². The only site that has been fully excavated is Carballeira de Espíritu Santo, a small hamlet that clearly shows the separation between the dwelling area (150 m²) and storage area (500 m²). These are large, well-structured sites. In Portugal, Bouça do Frade is still the best example of a site from this period (Jorge 1988).

With regard to the dwellings, it is interesting to note the continuation of the earlier construction methods, although some differences are observed at a technical level rather than at a morphological level; for example, the post holes and foundation trenches for the huts are dug deeper. There is also an important difference with regards to the longhouses — the appearance of dividing walls indicates the systematic introduction of internal divisions to the houses. The shape of the huts became longer, as can be seen in Sete Pías, although circular shapes continued in sites such as Carballeira de Espíritu Santo, both of which served as a precedent for Iron Age houses.

In some settlements, it appears that the moment of abandonment may have been ritualized, probably clearing the area with fire and selecting a certain pit for the deposition of special objects, such as a nearly complete vessel and large mill stone, split in half (Prieto-Martínez 2013a). This can be seen in Monte Buxel, Monte das Cabanas, and Carballeira de Espíritu Santo, as previously mentioned, which has been interpreted as a rite of abandonment (Prieto-Martínez 2013a). In the sites from previous periods, the larger numbers of pottery fragments (3000–4000 sherds in small excavated surfaces) are normally abandoned by the outer side walls of the huts and in their proximity, in a better preserved state and in larger sizes.

Finally, the introduction of stone as building material around the turn of the first millennium provides important new evidence, as can be seen in Punta de Muros (Cano-Pan 2012), where we can deduce the presence of an urban layout that did not previously exist, although this site is exceptional in Galicia. It should be noted that houses from the Late Bronze Age are being excavated in the lower levels of Iron Age hill forts, such as A Graña, although these types of examples are more frequent in the north of Portugal (Prieto-Martínez and others 2017).

**Final Comments**

Prehistoric settlement in Galicia is characterized by an abundance of structures excavated in the C horizon of different functionalities, in many cases as a result of repeated human action over thousands of years. We cannot refer to houses or dwellings as such until the Late Neolithic, and even then, they are small and without internal divisions. As we progress through time, we can observe an increasing diversity of architecture — with more layouts and construction systems — and sizes. The longhouse cannot be documented with any certainty until the Middle Bronze Age, reaching its greatest internal complexity in the Middle and Late Bronze Age (Fig. 6.7).

The process of increasing complexity observed in these dwellings occurs in parallel to that seen in the
settlements, both in terms of the locations chosen and of their internal organization, which became more complex and orderly over time. A greater diversity and possible hierarchisation of sites can also be seen. In short, despite the lack of available data, we can see a clear trend towards increasingly complex settlement throughout prehistory in the north-western Iberian Peninsula. However, we should not place too much emphasis on an apparent ‘evolution’ of housing over time in the region. The circular house is always present, but the way of organizing the dwellings within the settlement or the actual sizes of the settlements offer us evidence of a rupture in the Bell Beaker settlements, which seems like an ‘involution’, or an attempt to avoid an inevitable social change (Prieto-Martínez 2008, 122, 153).

I suggest that the rates of transformation observed in the architecture of houses in Galicia runs parallel to the changes observed in other regions of Northern Europe, although the structures seen in Galicia are somewhat different. While the change from the house with curved walls to the longhouse is the most significant change in Galicia, in Northern Europe the major change was from the two-aisled longhouse to the three-aisled longhouse.

In Galicia in the Early Bronze Age, the round and oval house developed according to the Neolithic tradition of this Atlantic region, that is also well defined in the British Isles (Gibson 1987; Eogan 1998). Roundhouses were short lived, usually forming part of what is called a ‘household module’ where another set of structures

Figure 6.7. Proposed chronological sequence for plans of dwellings in Galicia, based on the available dates and typologies (figure by author).
6. PLACES TO BE, OR PLACES TO LIVE?

Figure 6.8. Dates from prehistoric Galician settlements (after CALIB REV7.0.0 programme).
such as pits or smaller constructions of posts or trenches accompany it (Bech and Rasmussen 2018). This seems consistent with the way of life that developed in Galicia, which was mobile and dependent on livestock. Additionally, in Galicia an increase in the size of the house is observed at the end of the second millennium BCE. This phenomenon of house enlargement also occurs in south-western Norway and Jutland (Bech and Rasmussen 2018, 45).

The most significant change in Galicia occurs in the Middle Bronze Age. The house changes completely and the boat longhouse is introduced, following processes similar to those registered in Scandinavia and elsewhere in Northern Europe. Bech and Rasmussen (2018, 45) believe that the three-aisled longhouse was successful in the long term because its construction was very practical, as it could be divided into sections with different functions, and attics could be added for storing and dispensing provisions. The boat longhouse appears abruptly and quickly takes hold, developing between 1700 and 1100 BCE in Galicia. This process could be comparable to what happened in Jutland and Rogaland (Bech and Rasmussen 2018, 45–46, 66), where a few three-aisled houses have been dated to c. 1900–1600 BCE. The two-aisled houses were completely replaced by three-aisled houses around 1500 BC (Presch-Danielsen, Prescott, and Holst 2018, 59). In Jutland, the houses have byres with stalls and pits used for cooking food, and gradually reduced in size during this period. On the contrary, in Rogaland, to the north of Jutland, there is no archaeological evidence of byres with animal stalls, and the pits used for cooking food were cut outside the houses. However, in both cases the houses may have two entrances on the same side (Bech and Rasmussen 2018, 46–52).

In Galicia, a local style of longhouse seems to have developed — the one-aisled longhouse with a boat-shaped floor plan, with post holes or foundation trenches for its walls, and three types of ends used for the building (semi-circular, flat or open endings), whose internal divisions run transversally to the longest walls, represents a local style which developed in Galicia. The standardization of this type of longhouse could be the result of people who were skilled and experienced in building houses, without actually being carpenters, and its uniformity could be the result of contact between settlements, an interpretation that also applies to Danish houses of this period (Bech and Olsen 2018, 149). The emergence of the longhouse in Galicia could be a phenomenon equivalent to the transition from the two-aisled longhouse to the three-aisled longhouse in Period I–II of the Bronze Age (c. 1700 BCE) in Scandinavia and Northern Europe. The introduction of the three-aisled longhouse in southern Scandinavia and Northern Europe is linked to the interest in building long-lasting houses and a change in the agricultural way of life, with the incorporation of livestock into the house (Armstrong-Oma 2016, 12). The increase in the size of the interior of the houses at this time coincides both in Galicia and in Scandinavia and Northern Europe (Bech and Rasmussen 2018), where an increase in the interior complexity of the huts is observed between 1800 and 1100 BCE (e.g. in the Netherlands, Fokkens and Fontijn 2013, 554).

In the Late Bronze Age, towards the end of the second millennium and start of the first millennium BCE, another change appears — there is a decrease in the size of the longhouse in Denmark (Bech and Rasmussen 2018, 37), and in the Netherlands (Fokkens and Fontijn 2013, 554). Although this has still not been directly observed in Galicia, this reduction in size implies a separation of spaces, of the space for livestock and that used by humans (Armstrong Oma 2016), and this organization of space in the settlements can be observed in Galicia.

Finally, another shared aspect between Galicia and Northern Europe is the disappearance of the longhouse; in the Netherlands, this occurs in the Late Bronze Age (Fokkens and Fontijn 2013, 555). In Galicia this happens at the start of the Iron Age, where stone began to be used in the construction of houses, which returned to the round house style, the predominant form in the European Atlantic area (e.g. the British Isles, Noble and others 2012).

In conclusion, there are certain parallels between Galicia and other regions of Atlantic and Northern Europe. The appearance of the longhouse and its success was not only the result of the practicalities of this type of construction. The changes observed in the houses are accompanied by changes in the settlements, where an increase in their diversity, size, and internal complexity can be observed, but also in the development of increasingly complex defensive systems. This series of changes in the settlement relates to economic changes (Armstrong Oma 2016; Bech and Rasmussen 2018), but also reflects changes in the organization of the family and community, which by the Iron Age had clearly become house-based societies, as defined anthropologically by Lévi-Strauss (1983) and which González-Ruibal (2006) defined for the hill fort societies of the north-western Iberian Peninsula. This interpretation could be applied to societies from the Middle Bronze Age in Galicia, if we accept, as Artursson (2009) suggests, that the longhouses imply a new social order, a transformative institution for society, a symbol of the gradual establishment and strengthening of the power of a family or lineage. Prescott, Sand-Eriksen, and Austvoll
(2018, 194) write, ‘The social capacity to interact with Northern European elites has roots in the establishment of alliances. As politics, kinship, and religion are one, as of the Late Neolithic the sea, travel, and boats were thus very real sources of power and integral to social institutions, but they also permeated the fabric of thought and symbols’. We should consider that the longhouse, the new social order, and its strategies, all went hand-in-hand in the development of a new system of alliances that spread over increasingly longer distances, embracing the entire European content, and that within this context, it is possible to comprehend the introduction and success of the longhouse in Galicia.

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Introduction

In a coedited anthology from 2009, Christopher Prescott argues for an empirically grounded ‘history in prehistory’ perspective on societal change. Here readers familiar with Christopher’s work recognize a defining trait of his academic pursuit: the argument for a shift of emphasis from an adaptive neolithization process, mechanically rolling northwards, to instead assess a suite of interrelated socio-political factors, informed by insights into the dynamics of cultural transmission. A core tenet in his approach is the need to embed regional and case-specific culture-historical detail, in this instance the key societal institutions of early farming communities living around Skagerrak, in a temporally deep and geographically wide perspective. This sensitivity is, in his own words, ‘an appreciation of the specific history — situated in time, space and context — involved in each case’ (Prescott 2009, 196). In the following we take our cue from Christopher’s approach in our focus on farming communities in broadly the same study area: the coastal region from Agder to Sogn and Fjordane in south-west Norway. And, most importantly, while the socio-political dynamics we discuss culminated at the end of the Migration Period (MP, 400–550 CE), nearly a millennium after the end of the Bronze Age, the relevant aspects of these coastal farming communities — households and related craft activities, mortuary practices, the ideology and political economy of elites — resonate in certain key respects with those of earlier agropastoralists living around Skagerrak. Specifically, Christopher recognizes a distinct set of features, what he calls a conjuncture of societal forces, institutions, and technologies, that can be identified throughout the rest of prehistory and into historical times (Prescott and Glørstad 2012, 4–5). Key features in this conjuncture were single-farm households embedded in distinct notions of hierarchy and a societal knitwork of exchange routes and alliances that stretched across Skagerrak, allowing travel and exchange of materials and objects. Importantly, this knitwork was held together by a shared concept of genealogy and perceived kinship, which permitted repeated travel and upheld long-distance alliances (Prescott 2009, 207–08).

The terminal Migration Period was characterized by an apparent crisis, and a focus on the dynamics of social institutions in turbulent times may add to archaeologists’ thinking about the resilience and vulnerability of social practice. In particular, we find analytical resonance in that south-west Norway seems to have had a continued importance in regional Nordic networks throughout the Bronze and Early Iron Ages, which was strongly related to this region’s nodal position in the networks of prestige exchange that involved the coasts of Norway and Jutland, and were felt long after the transition to the Bronze Age (Prescott 2009, 209–10).

This chapter is a study of the apparently puzzling choices made within ceramic technology and mortuary practices, especially in the final decades of the Migration Period after 500 CE. Our discussion centres on the implications of new archaeometric analyses, which have made us rethink the rationales at work. In a previous piece we discussed reasons why one specific type of ceramic container became omnipresent in the fifth century and seems to have lingered in the decades after 500 CE, after virtually all other pot making had ceased (Fredriksen, Kristoffersen, and Zimmermann 2014). We argued that an increasing
intimacy between clay and metal crafts in the second half of the fifth century was a key factor, thus underpinning the relevance of a cross-craft perspective. However, since the aim was to identify creative nodal points, we focused on workshop milieux as contexts for knowledge transmission and could therefore only point out that the process of growing craft intimacies seems to have unfolded in tandem with developments in mortuary practices.

The following analysis picks up where our work from 2014 left off, examining why developments in ceramic technology and mortuary practices in southwest Norway apparently amalgamated in the century from around 450 to 550 CE. Focusing on chaîne opératoire choices made by not only craftspeople, but also the bereaved in mortuary settings, our aim is to present a pilot study that paves the way for future context-sensitive studies of technological rationales within this particular time segment, in ways that may be related to a wider societal framework for western Scandinavia during the Bronze and Iron Ages.

Scope and Approach

The linking of the domains of crafts and death draws analytical attention to the household, the key arena for knowledge transmission among farming communities throughout the Bronze and Iron Ages. It is by now widely recognized that this social institution and its members — human and nonhuman — in their more or less prosaic everydayness are of critical importance for understanding the reproductive capacity of prehistoric societies. Significantly, pot making in western Scandinavia seems to have shifted from ceramics-as-potting to ceramics-as-metalwork in the second half of the fifth century (Fredriksen, Kristoffersen, and Zimmermann 2014). This was a decisive move towards specialisation, through which a novel organization into workshop milieux became integral to household activities, where certain magnate farms in the Jæren area in south-west Norway appear to have formed an innovative axis for metal and clay crafts. However, ceramic manufacture continued elsewhere in the study area after the transition, and the merging with metalwork was probably a key factor in the development of crafts following decades. Importantly, the bucket-shaped lingered as virtually the only ceramic type during the final phase. Indeed, it remained omnipresent and was of no less importance as a grave container.

The creative intimacy between crafts, and especially the shifts of learning arenas it implied, is significant and may provide contextual insights to an interpretative framework for the production and reproduction of social memory. Following Howard Williams (2004), our analytical departure point is that the ubiquity of certain containers in mortuary practices has more than prosaic significance. In his study of cremation graves from the Roman period in south-east Britain, Williams (2004, 419–20) argues that pots in graves were material nodal points in constructions of social memory, being integral to communal practices and individuals’ bodily experience during mortuary rituals. However, while this approach is instructive, we face an interesting context-specific challenge. Ceramic vessels were ubiquitous in graves in the fifth century in South-Western Norway. The consistent use of bucket-shaped pottery in burials in the study area has led to the contention that there may have been only one such vessel for each individual (Magnus 1984; Fredriksen 2005, 2006). Yet, after a period of thriving progress, culminating in a peak in quality and popularity as grave containers, the pots vanish from the archaeological record a few decades later. Consequently, we need to ask not only why these vessels were omnipresent in graves but also what made their production cease in a rather sudden manner.

This collapse should be viewed against a societally wider and temporally deeper backdrop. The end of the Migration Period around 550 CE in western Scandinavia was the culmination of several decades of political unrest and conflict. The early and mid-sixth century was a turbulent time, epitomized in the much-debated 536–37 CE ‘dust veil event’. However, it cannot be overlooked that the dramatic events in the terminal phase were preceded by other causes for socio-political change. Indeed, the fifth century saw a unique process of cosmological and institutional invention in Scandinavia (Herschend 2009; Hedeager 2011). Within the 200-year period leading up to the troubled mid-sixth century, the production of bucket-shaped pottery seems to have thrived in western Scandinavia, particularly in the coastal region from Rogaland to Sogn and Fjordane, where the type is found in most MP graves. Our previous work (Fredriksen, Kristoffersen, and Zimmermann 2014, 120), established a three-phase sequence:

I. Emergence and establishment: second half of the fourth and early fifth century CE.
II. Experimentation and acceleration: middle and late fifth century CE.
III. Peak and collapse: first half of the sixth century CE.

After more than a century of flourishing progress, the final decades of the MP seem critical. Lingering as virtually the only ceramic type still being made in the
final phase 500–50 CE (called D2b, see Kristoffersen and Magnus 2010), the production of bucket-shaped pottery apparently ceased at its peak of technological skill and performance. Significantly, the pace of societal change in the decades before and around 500 CE was so rapid that they would have been felt within one potter’s lifetime. As motor habit patterns for pottery production may usually take at least a generation to change, we need to consider factors such as a new openness to innovation, new producers coming in, ensuing shifts in social identities, and new connections between particular communities of practice (Roddick and Hastorf 2010, 164–67 with references).

In our opinion, inquiries into the ceramic technology’s rise to sophistication and its ensuing vulnerability should be related to the pots’ roles in ‘technologies of remembrance’ and the relative importance of material containment of being, between ways of treating the dead body in mortuary rituals (Williams 2004; cf. Fowler 2017, 103). The differences serve to sustain contextually specific attentions to materiality in dwelling spaces, whether these spaces are the dwellings for the living (households) or for the dead (graves). Such seamless traversal of the living/dead boundary is grounded in everyday bodily practice (Fredriksen 2016, 153–56). As recently argued by Fowler (2017, 102), mortuary practices are technologies that transform the dead and the living, changing relations between and among both communities. By viewing graves as assemblages and being sensitive to subtle temporalities of their material compositions, Fowler’s (2017, 96, 102) approach offers an understanding of social change which also directs attention to the changing affordances of materials and legacies of past actions. This means that pots and burials are assembled through repeated acts that can be described as a context-specific gathering of objects and people that cites previous burial events. The recurrent citation is fundamental to the process of making and remaking social memory (Lucas 2012, 195–201). In other words, the memory of how to assemble things and people in a death setting becomes ‘distributed’ as a practice, as embodied techniques (Fowler 2017, 96). These practices may be identified as distinct recipes for making and furnishing graves that may, in turn, be compared and related to concurrent recipes for making the various material constituents of the assemblages, in our case the ceramic containers.

The time frame and geographical focus here is the 200-year era of combined use of stone cist burials and bucket-shaped pottery in south-west Norway. That is, from the pots’ introduction in the mid-fourth century CE, in the last decades of the Late Roman Iron Age (LRIA), until the end of the MP. We use the chaîne opératoire concept not only as a concrete analytical framework but also as a heuristic tool that connects the two dimensions of handcraft and mortuary body treatment. We analyse burials and their spatial body/thing distributions, with particular emphasis on the relationships between metal and ceramic objects and the dead human body, following these patterns through the same three phases established for handcraft development. Significantly, the chaîne opératoire approach enables us to point to cultural ideas about the correct way to interact with dead bodies. Following Appleby (2013, 87) we seek to demonstrate that, by placing the different treatments of dead bodies from mortuary contexts into a frame of operational chains, it is possible to investigate such cultural ideas in more detail and in this manner come closer to an understanding of how they came into being.

Importantly, our contextual frame also includes a set of criteria developed to distinguish relative differences in quality between ceramic recipes. Distinct characteristics for the final Phase III are the iron collar immediately below the rim (for supporting a handle); the non-decorated, reserved area for the collar, a ‘surface-covering expression’ using a limited spectrum of carved decoration stamps onto slim (> 4 mm) wares; and a predominance of lightweight pastes tempered with steatite or asbestos (Fredriksen 2006, 128–30; Kristoffersen and Magnus 2010, 41–61). Particularly the décor trait termed ‘the width of the horizontal zone’ is typical for Phase III (Kristoffersen and Magnus 2010, 59–61). By mapping the distribution of ceramic craft recipes following these criteria (cf. Gosselain 2011), we have encircled two distinct areas with workshop milieux that most likely were creative nodes between 450 and 550 CE: Sogn in Sogn and Fjordane (Kristoffersen and Magnus 2015), and Jæren in Rogaland (Fredriksen, Kristoffersen, and Zimmermann 2014).

Before presenting the main chaîne opératoire analysis we will here briefly outline two sets of results from our recently conducted archaeometric studies, which have informed our approach to the ceramic technology and its links to mortuary rituals.

**Two Interrelated Trends**

The archaeometric methods include descriptive petrography, mineralogy, geochemistry and isotope geochemistry, and non-destructive Raman spectroscopy (Zimmermann 2010, 2011, 2012; Zimmermann and others 2016). A total of fifty-six samples were selected on the basis of the typological chrono...
by Kristoffersen and Magnus (2010). The results can be grouped into two research foci: 1) the use of temper and its implications for functionality and aesthetics throughout Phases I–III, and 2) the process of acceleration in Phases II and III ending in collapse.

Regarding the first focus, the evidence from pots found in Phase I burials on Jæren indicates that the clay is extracted locally, but a recurring type of a Chromium-rich talc inclusion has a geological signature that most likely places the source in northern Rogaland (Zimmermann and others 2016). The additive thus seems to be brought from further north to Jæren, and thereby into an area for which the archaeological record clearly demonstrates that resident Migration Period potters exploited locally available tempering materials with better thermodynamic qualities. It is hard to recognize any obvious practical reasons for choosing this particular additive. Moreover, the petrographic studies show that tempers in several cases are not spread evenly, and that vessels were fired at very low temperatures. In other words, the data indicate quite clearly that other rationales were at work than those expected from a modernist point of view. Significantly, this pattern is discernible already for Phase I. Consequently, the material leaves us with a new set of questions: Why were certain inclusions chosen without any apparent pyrotechnological benefits? Were certain mineral sources in the landscape visited for their cultural or cosmological significance? To what extent were pots made with the intent to be used as a grave container, and how did this practice, apparent in Phase I, develop throughout the MP?

The results are still preliminary, and within the scope of this chapter we limit the discussion to the question of the pots’ role as grave containers. Two contemporary parallels are relevant here. The first belongs within the study area and is the so-called black burnished ware. Most likely introduced from Denmark and Northern Germany slightly earlier than the bucket-shaped, black ware was locally produced in Rogaland, Vest-Agder, Sogn, and in eastern Norway (Bøe 1931; Stout and Hurst 1985; Stout 1986; Rødsrud 2012). Significantly, while coexisting in time and space, the black ware and the bucket-shaped remained two distinct technologies. From at least the mid-fifth century, the bucket-shaped seems to have continually developed towards higher quality, with an extensive use of local minerals (see Engevik 2008, 130–32, table 9.2). The production of black ware, conversely, used a different building technique and held on to the original sand inclusions, and seems relatively ‘frozen’ throughout the entire sequence. Interestingly, one particular and rare type of the black ware, Buckelurnen, continued to coex-

ist along with the bucket-shaped in Phase III. Some rare vessels are found in very late Migration Period graves, such as Skjærpe (S5741) in Hå, Rogaland and Nerhus (B14954) in Kvinherad, Hordaland. Both graves are probably transitional to the following Merovingian Period, and in both instances the Buckelurne is found together with a bucket-shaped vessel. As a grave container the Buckelurne is most often related to rich burials. In light of our results it is interesting to note that the type is traditionally viewed as not intended for practical everyday use, but rather made specifically for use as a grave vessel (Genrich 1983, 90).

The second parallel is the divergence in use of pots in cremations in Iron Age Britain. As noted by Williams (2004), early Anglo-Saxon (fifth to seventh century) cremation practices included the use of vessels ‘produced with the specific design of communicating the identity of the dead’ (Williams 2004, 422; see Richards 1987). This stands in contrast to the earlier Roman period, where domestic, mundane artefacts seem to be the preferred choice. The material culture selected for use in cremation were objects most closely connected to everyday social practices that included food and drink. Again, we see a largely concurrent Iron Age transition where the production of certain grave vessels is drawn out of the everyday and into a ‘death technology’, a mode in which pots were made for use in mortuary practices.

Our second research focus, the acceleration process in the fifth century, should be seen in close connection with the puzzling ways of mending pots. The study by Magnus (1980) and recent work by Bakken (2017) demonstrate that mending of bucket-shaped pots was to a large extent done using repair methods for metal and glass containers. Significantly, the methods left the pots unsuitable for containment of liquids. Our survey of mended vessels in the study area (see also Fredriksen, Kristoffersen, and Zimmermann 2014, 127–28) verifies that they rarely occur in Phase I. The majority of such vessels are dated to Phases II and III. For these reasons, mending appears to be a reliable indication of the existence of technologically influential metal workshops.

Two interrelated trends can thus be highlighted. Firstly, the practical ‘usefulness’ as a vessel that is capable of containing liquids seems to have been relatively less important for grave vessels, and this pat-
tern is discernible already in Phase I. Secondly, the mending using metalworking techniques was clearly more common in Phases II and III. Seen together, the two aspects add relevance to the indicated one-to-one relationship between bucket-shaped pottery and buried individuals, especially in Hordaland and Sogn and Fjordane where this body/pot intimacy is most commonly articulated (Fredriksen 2005). Thus, it seems critical to get a better grasp on key developments in mortuary practices in the fifth century, in order to reach an understanding of the relationships between body/human remains and grave containers. Significantly, these developments occurred in a time period of profound changes to social institutions, culminating in novel ways of understanding body, self, and identity (e.g. Wiker 2001; Fredriksen 2006; Hedeager 2011).

Ceramic Containers in Migration Period Graves

We developed a simple chaîne opératoire approach for this analysis, inspired by the more comprehensive framework by Appleby (2013). The key factors are: 1) the point of entry of ceramic containers into the mortuary chaîne opératoire; 2) the spatial relation to the body or the human remains and 3) the relative temporal stage in the sequence of mortuary practice. Accordingly, the analysis applies a temporal frame that classifies grave contexts with bucket-shaped pots into three broad categories, defined in order to facilitate comparison between different mortuary practice modes (cremation and inhumation):

A. Deposition with the body (close to body, by head or feet) or the human remains.
B. Deposition after the body in inhumation (in grave perimeter, by cist wall) or as container for the cremated remains.
C. Deposition after burial (outside the grave and/or the grave assemblage).

The first part of the analysis presents general patterns for cremation and inhumation, while the second centres on specific variations in inhumation practice that illustrate the making of a ‘technology of remembrance’. The counties along the North Sea coast in south-west Norway provides a fertile ground for exploring such practices, although skeletal remains are seldom preserved. In total we have registered about 800 bucket-shaped pots from burial contexts in the primary study area from Sogn and Fjordane to Rogaland. In addition, we draw attention to certain relevant examples located in neighbouring Agder, on the southern outskirts of the study area.

In cremations, bucket-shaped pots are most commonly found as shards with the pyre remains (category A), or as urns (category B). With regards to the latter, bucket-shaped vessels with cremated bones are known from thirty-six graves. These are found throughout the 200-year period, from early Phase I to late Phase III. Interestingly, twelve of these are significantly larger (<20 cm in diameter) than the average (about 15 cm) and have few parallels in other contexts besides burials. They seem, therefore, to have been made for the purpose of being included in a grave assemblage. Such large vessels are found mainly in Rogaland (Fig. 7.1), with a few examples from Hordaland.

Category C cases of cremation do occur, as bucket-shaped vessels are known to ‘follow’ urns of other types, such as copper alloy cauldrons, as a secondary vessel (cf. Shetelig 1912, 35, 38). For example, in a grave from Valand (B4214) in Audnedal, Vest-Agder a total of ten vessels, including one or two bucket-shaped, were placed around a small stone chamber containing a cremation pit.

For inhumations the overall pattern is of bucket-shaped pots most often placed around the deceased (categories A and B, see below). However, there are also some interesting cases of category C. For example, vessels may be found outside the grave itself but...
were clearly a part of the burial context. In a grave from Hamre in Leikanger, Sogn, and Fjordane a pot (B6333) was placed c. 2 m outside the cist wall. And the vessel may have been separated from the grave by being deposited underneath the mound, as in the case from Bjornarheim in Gloppen, Sogn, and Fjordane (B11474) or, alternatively, in the mound fill such as the grave at Døsen in Os, Hordaland (B6032, see Shetelig 1912, 127, figs 298–99). Also, there are depositions in bogs and screes where the vessel’s relation to death and burial remains somewhat unclear. Examples include a vessel from Hetland in Sandnes, Rogaland (S1671) found in a scree, and one from Tjøtta in Klepp, Rogaland (S6394) found in a bog. It remains an open question whether these vessels

Figure 7.2. Inhumation grave with a 6-year-old child from Skreros, Birkenes, Aust-Agder (C22140), dated to the LRIA. The child was buried with nine pots of various types, of which none were bucket-shaped: high-necked vases (type R368, Rygh 1885), a so-called tutekar (type R357) and various forms of handled vessels (types R361, R364 and R365, Rygh 1885). Two vessels were placed above the head to the left, three in the corner above the head to the right, a handled vessel and the tutekar were placed inside wooden containers, and the handled vessel was found in a double wooden vessel. Nearest to the head was a miniature cup containing a knife. In the other end, two pots were situated near the feet and against the side wall, one was inside a wooden vessel, and, finally, one was placed beneath the feet. After Gjessing 1920: 19–20, figs 7–8 (photo by Museum of Cultural History, University of Oslo).
were deposited as pots on their own or as containers for something else, such as food.

In a few instances of category C, pots are found to be deliberately broken and scattered. As early as a century ago, Shetelig (1912; 1917) noted the practice of scattering shards on grave assemblages, interpreting it as deliberate acts that followed the deposition of the body. The interpretation was based on observations of broken pots in otherwise undisturbed burials, a phenomenon also known from more recently excavated and well-documented Roman Period graves in Denmark (Ethelberg 2000, 33–34). An example of this version of category C from the study area is a Phase I inhumation from Folkedal (B7837) in Granvin, Hordaland, a small stone cist interpreted as a child’s grave (Fett 1944). The grave had two small, identical bucket-shaped pots. One pot had been broken into shards, and the shards put in a wooden vessel. This arrangement was located in the sand layer that covered the deceased child. The other pot was found intact on top of the same layer (Fett 1944, 13). This assembly sequence clearly indicates that the two vessels played specific roles in the mortuary ritual after the interment of the body, during and after the covering of the body with a layer of soil.

Significantly, assemblages that include bucket-shaped pots and deceased children comprise a small but distinctive group of graves. A prominent example is the richly furnished female burial from Kvåle in Sogndal, Sogn and Fjordane (B13954) with a small bucket-shaped pot placed inside a slightly larger one (Kristoffersen 2000, 362–64, 386). The two pots may be viewed as ontological metaphors of a deceased woman and a 10-year old child carefully placed on her arm (cf. Fredriksen 2006, 134). Also, in another rich and well-documented burial (B8043) from Hauglum in Leikanger in the same county, there were no human remains left, but the arrangement of objects suggests a similar assemblage as the Kvåle grave: a small pot inside a larger one next to a woman who may have had a child on her arm. A third example is the more recently excavated cremation burial at Sorbø in Sandnes, Rogaland. The cremated remains of an adult and a small child were found inside a bucket-shaped pot, together with shards of a smaller bucket-shaped pot (Dugstad 2011, 125–27). Finally, it is here tempting to draw attention
to the highly illustrative grave of a 6-year-old child from the final LRIA in Phase I (Fig. 7.2), located in Aust-Agder at Skeros, Birkenes (C221410), on the outskirts of our study area.

The examples substantiate that there was a wide spectrum of ways to use bucket-shaped pots in the mortuary process. In the second part of the analysis we provide a more detailed overview of the most frequently occurring burial types: category A and B inhumations. Although only a few graves have intact human remains, the relative regularity in positioning of material culture in graves clearly reflects a distribution centred on a human body. This regularity is underscored by the frequent ability to identify the position of head and feet. In our study, the pots’ relative position in the grave is reliably documented for a total of 125 graves, either by being plotted on a grave plan drawing or by having their locations described in an excavation report with acceptable accuracy.²

Two chaîne opératoire categories stand out as regular: A) beneath the feet or close to the head, and B) close to the side wall or end gable of the cist. This observation finds support in that a similar pattern is demonstrated for the Kvassheim burial ground, where containers were positioned either by the feet, by the head, or in relation to the torso (Lillehammer 1996, 88–89).

Category A: Close to Feet and Head

Haakon Shetelig (1912, 110–11, 128; 1917, 28, 48) pointed out that a position close to the feet is dominant. In our study area bucket-shaped pots are placed in this manner in sixty graves. This position is common for other grave containers made of clay or wood. Shetelig (1912, 111) also noted that the position close to the head is common. A total of thirty-three graves have bucket-shaped pots in this position, occurring most often in Hordaland (fourteen). Common for both variations are that they are found regularly from the Late Roman Iron Age and throughout the Migration Period, fairly evenly distributed for Phases I to III. Interestingly, while the head and feet positions are found for different types of inhumation graves, there is still a clear tendency for the head position to be associated with weapon burials (Fig. 7.3), of which several contain a sword and can be categorized as well-furnished. An example is the richly equipped weapon burial from Nerhus in Kvinnherad, Hordaland (B14954) with well-preserved skeletal remains, dated to Phase III. The skull has been moved to the side wall, but its original position was next to the bucket-shaped pot, whereas the Buckelurne was close to the feet (Myhre 2005, 285, fig. 8).

In total, there are fourteen weapon graves with a bucket-shaped vessel by the head. Significantly, other grave containers are also located in a head position. This includes the frequently occurring handled vessel of type R361, and in well-equipped graves we find copper-alloy and glass vessels, sometimes placed within other containers made of wood, clay, or copper-alloy, and these occur throughout the sequence from Phase I to Phase III. Here we draw attention to two well-known graves at the southern edge of the study area. The Phase III grave Snartemo V in Hagebostad, Vest-Agder (C26001) had a repaired, antique glass vessel placed inside a Vestland cauldron, and the vessels were located to the left of the deceased’s head, near the stone cist corner. The bucket-shaped pot was located near the feet, probably next to a Perlandbecken (Hougen 1935, fig. 2). The nearby double grave (probably male and female) from Vemestad in Lyngdal (B4414), located in the same valley as Snartemo, had two wooden containers, one with a glass vessel inside, near the male’s head in the northern part of the cist. A bucketed-shaped pot and a type R361 vessel were placed near the opposite end wall to the south, close to the male’s feet and the head of the female.

Category B: Close to Cist Wall

Bucket-shaped pots are found close to a cist wall in fifty-six graves (Figs 7.4 and 7.5).³ Typically, containers are placed by the side wall or next to either of the two end gables, sometimes in a corner. This positioning occurs in the final decades of the LRIA in Phase I until the very end of Phase III. Shetelig (1912, 53) noted that this was probably established when containers entered inhumation burials in the LRIA. According to Shetelig, there are no containers in the inhumations dated to the Early Roman Iron Age (ERIA, 1–200 CE), and our observations support this claim. In Rogaland there are five inhumation graves dated to the ERIA and none of these contain pottery, although pots are present in most cremation graves from the same time period. However, it

² The number includes graves with report descriptions of pots found in ‘one end of the cist’, thus without being plotted on a grave plan drawing.

³ We have included this type of information from unpublished reports, although the reports may not always be in accordance with present day standards. For the purpose of this study, a significant number of the graves excavated in the late nineteenth and early twentieth century are found to have adequate documentation of the distribution of material culture.
Figure 7.4. (above) Inhumation grave from Løining/Øystese, Kvam, Hordaland (B6809). Skeletal remains are not preserved and the middle section of the grave was somewhat disturbed, but otherwise the objects seem to be in their original position: 1–3) three copper-alloy brooches; 4–5) copper-alloy belt ring with fragments of iron key and knife; 6 and 8) wrist-clasp buttons (type R269, Rygh 1885) gilt silver, one with Style I animal décor; 7) iron mount; 9–10) pieces of putty from wooden vessels in disturbed position; 11) shards from a bucket shaped pot (drawing by Hege Vatnaland, after Shetelig (1915)).

Figure 7.5. (left) Inhumation grave from Tu, Klepp, Rogaland (S1496–93). 1–3) Two bucket-shaped and one handled pot (type R361, Rygh 1885) situated close to the north-western end wall below the feet of the deceased (skeletal remains are not preserved). In the opposite end the cist contained a glass vessel (type R338, Rygh 1885) close to the head and a copper-alloy vessel (Vestlandskeje/type R353, Rygh 1885) close to the south-eastern end wall. In addition, the grave contained a double-edged sword, two gold payment rings, a quartzite whetstone, iron shears, a knife, a lance, and a shield boss (Hauken 2005: 81, plate 23–25) (drawing by Thor Helliesen from 1882, from the Register of Museum of Archaeology, University of Stavanger).
is significant to note that containers made of other materials occur in inhumations from the following LRIA, in similar positions but prior to the introduction of the bucket-shaped type. A highly illustrative example is Sigurd Grieg’s (1938, 41) description of an early LRIA grave from Lunde in Farsund, Vest-Agder, which is one of the earliest Roman Period inhumation burials in the Lista area (regrettably the material is now lost). Notably, a glass vessel was placed in one corner and three R361 handled vessels were located in each of the other corners. This corner location for handled vessels is also known from other graves. A well-furnished burial from Haugvalstad in Rennesøy, Rogaland (S3820) had an R361 vessel in the SE corner, together with a wooden vessel. The same grave also had a glass vessel, probably situated in the opposite end. And in the Phase I grave from Veie in Voss, Hordaland (B11623) a wooden container had been placed in each of the corners by the north-west end gable. This collection of examples clearly indicates that the bucket-shaped type was introduced into pre-established Roman Period practices for the furnishing of graves.

**A ‘Technology of Remembrance’ Emerges**

The analysis leaves us with an apparent conundrum that needs to be subjected to further scrutiny — there is a clear continuity in the roles of containers in mortuary practices for the entire 200-year period of this study. Specifically, the recipes for handling and locating bucket-shaped pots, as well as other types of containers made of clay, wood, metal, and glass, seem to be broadly similar and to follow related rationales throughout Phases I to III. Overall, inhumations of categories A and B are the most frequent, clearly demonstrating the body to pot intimacy was prominent throughout the Migration Period. However, quite contrary to our expectations, there are few indications of major changes in mortuary practices during the turbulent fifth century. Significantly, we cannot identify clear breaks or shifts in the grave assemblages that are parallel or concurrent with the major changes for social institutions and technologies. The prevailing practices, specifically the rationales and recipes for handling and placing grave containers, seem rooted in practices that were already established by Phase I.

What may explain the high degree of continuity? In our opinion, this question requires an attention to more subtle changes in grave assemblages; a focus on the interplay between material constituents of the assemblages and how these cite previous burial events and the legacies of past actions (cf. Fowler 2017), the recurrent citations that are fundamental to social memory processes (cf. Lucas 2012). Our chaîne opératoire analysis makes clear that it is the prescribed recipes for handling and placing containers that seem resilient through the MP. However, the objects, and their webs of material links to various crafts, did indeed change. Specifically, while bucket-shaped pots were made and used in ways that went beyond what is deemed functional from a modernist point of view throughout Phases I–III, there is a clear pattern in that repairs of vessel types are dated to Phases II and III. This novelty after Phase I is concurrent with the transition to ceramics-as-metalwork. Interestingly, repairs using metalworking techniques are rare for the frequently co-occurring R361 handled vessel, for which production died out by 500 ce. As previously noted, the only other vessel type that seems to have been included in the metalworking workshop milieux after 500 ce was the Buckelurne (Fredriksen, Kristoffersen, and Zimmermann 2014). However, to our knowledge, the latter type has not been repaired in the same ways as the bucket-shaped pot. This means that the bucket-shaped seems to be the only ceramic type that was allowed to ‘grow old’ in a manner that required repair by specific craftspeople. And the repairs themselves place the pots in a category otherwise consisting of containers of metal and glass. These ties clearly hint at an added value of the bucket-shaped type, increasingly through Phase II and culminating in Phase III, and offers an explanation for their lingering as virtually the only ceramic type in production in Phase III, save a few Buckelurnen.

On this basis we argue that the continued production of bucket-shaped pots after 500 ce is best explained as expressing a perceived necessity for continuity in mortuary practice in a time of deep societal transformation, already well underway when fuelled by worsened climatic conditions. Clay containers were still needed at various stages in the burial process. As a consequence, the production was incorporated into the metalworking milieux. These milieux had deep a knowledge of mythology and tradition, revealed and displayed by their Style I relief ornaments. Thus, the technological acceleration and peak for this particular tradition do not seem to have been driven by internal societal motivations for change, but rather by the motivation to hold on to longstanding mortuary traditions, seeking continuity in a period of unrest and uncertainty. The production and consumption of pottery in households had decreased significantly since Phase II in the previous fifth century. In the terminal Phase III bucket-shaped pottery seems to have been produced to a large extent with the primary intention of being
ritual grave containers. In other words, the production had turned into a ‘death technology’.

This development may be summarized by expanding our three-phase frame into a further refined chronology for bucket-shaped pottery in graves in south-west Norway:

1. Phase I (late fourth and early fifth century CE): establishment of standardized aesthetics and pastes, including early use of asbestos and soapstone as tempers.

2. Phase II (middle to late fifth century CE): experimentation and acceleration, intimacy between high quality bucket-shaped pot making and metal technology.

3. Late Phase II (late fifth century CE): production of high-quality ceramics breaks away from the household and becomes a workshop activity.


5. Phase III (sixth century CE): production of high-quality bucket-shaped pots and Buckelurnen are linked to metalwork. Intensified production and repair of pots intended for burial.

**Concluding Remarks**

Inspired by Christopher Prescott’s argument that we need to assess a suite of interrelated and context-sensitive factors when studying the dynamics of cultural transmission among farming communities around Skagerrak, we argue that the bucket shaped pots’ continued production and use — and extensive repair — in Phase III of the Migration Period was due to their role as key material constituents in burial assemblages that cited earlier graves. Finding resonance in Christopher’s analysis of the foregoing Bronze Age and following his example, by viewing households, craft activities, mortuary practices, and political ideology as interwoven, we discern a late Early Iron Age society that sought stability by looking to the past during times of unrest. A crucial element in the *conjoncture* of societal forces, institutions, and technologies at play is the perceived kinship ties and marriage alliances, which Christopher underscores as ‘the most important cohesive institutional force in pre-state societies’ (Prescott 2009, 207). Seeing the Migration Period in this light, we recognize a tightly knitted network that had stretched across Skagerrak for centuries since the Bronze Age. Key threads in this knitwork were the continued performance of social practices and specific crafts, including pottery and metallurgy, which carried a distinct heritage and were anchored in the remembrance of the past. The largely concurrent changes to crafts and the organization of the household in the troubled fifth century CE indicate that at least parts of this knitwork frayed and dwindled during the Migration Period. This can be related to the emergence of a new elite along the North Sea coastline in south-west Norway, one that reconfigured the leadership ideology and found a distinct material expression in metalwork and the use of Style I animal art. Importantly, here we discern a new layer of ideology that would have been difficult to recognize without the precise identification of the older layer that extended back to the Bronze Age.

The changes to societal institutions that had occurred during the fifth century must have lingered prominently in social memory in the early decades of the following century. Having experienced the rapid pace of change, the few potters still active in workshop milieux in the sixth century were contributing to resilient mortuary practices. Through their manufacture, they carried a form of material memory work that had left the household during Phase II. Moreover, in Phases II and III these craftsfolk did not only make pots for use in mortuary settings, they also repaired broken vessels for this purpose. Their products became material nodal points in local constructions of memory in and around graves. However, their high-quality craftwork was vulnerable. The learning arenas and transmission of sophisticated insights did not make it through the cataclysmic events that began in the 530s. Two or three decades later it was all gone.
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Part II

Ritual and Everyday Life: Ontologies, Images, and Place-Making Practices
8. Together or Apart?

Identifying Ontologies in the Nordic Bronze and Iron Age through the Study of Human-Horse Relationships

Introduction

This chapter is about identifying ontological differences in the past. More specifically, it investigates whether ontological differences can be detected during the Nordic Bronze Age (NBA), c. 1600–500 BCE or between the NBA and the succeeding Iron Age, c. 500 BCE onwards, and whether this can be done through material culture studies and through changes in human-animal relationships.

It is argued here that the perception of the world in the NBA was fundamentally different from how the world was conceived in the succeeding Iron Age. The changes in metal production, which epitomize the transition from the Bronze to the Iron Age c. 500 BCE in southern Scandinavia, were part of a series of large-scale changes in society that began during the first half of the first millennium BCE. This is evident in changes to hoarding practices, settlement systems, and agricultural practices that occurred in an emerging artificial structuring of the landscape as characterized by: agglomerated settlements (e.g. Becker 1982; Webley 2008), large collective cemeteries (e.g. Becker 1961, 128–80; Jørgensen 1971), repeated offerings of ceramic pots and human and animal bodies at specific sanctuaries (e.g. Becker 1971; Lund 2002; Asingh 2007), permanent field systems, and artificial boundaries (for example, fences and ditches) (e.g. Hatt 1949; Nielsen 2000; Løvschal 2014a–c), and possibly in the presumed introduction of anthropomorphic gods (e.g. Kaul 1998, 248–56; 2004, 341–52).

An underlying hypothesis is that if we accept that non-human beings act as constituent agents (i.e. significant others) in human worlds (Haraway 2003), and that non-human beings at the same time are sensitive to changes in human perceptions of the world, then human-animal relationships could be both formed by, and affect how, humans organize the world through transformation and extension of specific, culturally dependent ‘cognitive maps’ of the physical world (cf. Renfrew 1987; 1994, 10–11). If this is accepted, then changes in society and how the world is constituted (ontologically speaking) are likely to be reflected in the zooarchaeological record and associated material culture, and thus probably in the deposition and treatment of human and animal remains. This will be tested through a reinterpretation of two contextually similar complexes of votive offerings including horses and humans from the Nordic Bronze Age and Iron Age respectively and discussed against an alternative interpretation of centred Bronze Age societies in Europe as described by Kristiansen and Larsson (2005). Before doing so we, however, need to establish the concept of ontology.

Ontology as a Concept

Ontology is defined here, as the way in which we consider the world to be, i.e. as a shared framework through which reality is perceived and interpreted (Descola 2006, 147). In this respect, an ontological turn, therefore, denotes a fundamental change in how the world is perceived. Conceptually, the ontological turn, however, represents an attempt to emphasize the existence of multiple synchronous worlds rather than different cultural understandings of the same world (Henare, Holbraad, and Wastell 2007, 10). As a consequence, and instead of trying to describe and understand prehistoric or
non-western societies in modern western terms by ignoring obvious differences and contradictions, we should accept that we do not fully understand what we observe (Holbraad 2009, 433). The ontological turn has been criticized for doing nothing more than to replace the concept of ‘culture’ with that of ‘ontology’ and for failing to replace the discarded epistemology (Sausdal and Vigh 2013). What is important here, however, is not whether ontology is just another word for culture, or whether we are looking at different worlds or representations of different worldviews, but the notion that we have to approach different cultures/worlds in their own rights through whatever lens seems most suitable, rather than applying the same methodological apparatus regardless of the culture/world under study. ‘Ontology’ and ‘the ontological turn’ are therefore applied as heuristic devices to think differently about past societies, and about changes in past material cultures, rather than as a critique of the concept of cultures.

Centred and Decentred Cosmologies

A hypothesis of fundamental ontological changes from the Bronze to the Iron Age might seem controversial. In their seminal work on travels, transformations, and transformations in the Bronze Age, Kristiansen and Larsson (2005, 357–59) identify two structurally different cosmologies (a centred and a decentred cosmology) in second millennium BCE Europe. Their interpretations are based on observed organizational differences between the east-central European tell societies and the tumulus cultures of north-western Europe, including the NBA.

Structurally speaking, centred cosmologies were characterized by a clear distinction between chaos and cosmos. This is reflected in how the centred societies were arranged physically. Consequently, everything was structured according to a defined centre of civilisation (e.g. fortified villages with a defined administrative and/or religious centre and large communal graveyards close by) as opposed to everything that was outside. The outside world, whether represented by nature or foreign cultures, was unstructured and dangerous. Furthermore, centred cosmologies were organized according to an overall idea of an axis mundi (e.g. Eliade 1993), a centre around which society united and which connected an otherwise vertically divided heaven and earth. The centred cosmology was thus organized according to dichotomies such as outside-inside, tame-wild, and earthen-divine (Kristiansen and Larsson 2005, 357–58).

In societies based on a decentred cosmology, cosmos was, on the contrary, established everywhere. Consequently, the nature-culture divide was less pronounced. Contrary to the centred societies that were structured according to a vertical model, decentred societies were horizontally arranged. According to Kristiansen and Larsson, there was no defined centre in societies structured according to the decentred cosmology, and they were generally constituted by a series of parallel settlement systems, each consisting of farmsteads, fields, ritual places, pastures, and burial mounds and ordered according to a tripartite system. Here, the horizontal denotes a horizontal continuum between individual settlement systems as reflected in, for example, barrow lines (Kristiansen and Larsson 2005, 358–59).

Summing up: what defines the centred cosmology is its vertical organization according to a defined centre reified as peak sanctuaries, central city temples, or fortified cities. However, the horizontal organization according to a strict divide between a centre and a periphery, between inside and outside, and between culture and nature equally defines centred societies. Kristiansen and Larsson’s use of horizontal as a defining term characterising the opposite phenomenon, the decentred society, is thus somewhat unfortunate. Adding to the confusion, the decentred cosmology is, moreover, divided into a tripartite system: a vertical divide of heaven, earth, and the underworld (Kristiansen and Larsson 2005, 358–59).

Despite the above challenges, I find Kristiansen and Larsson’s concept of centredness and decentredness highly useful as a tool to describe and differentiate organizationally different societies. Some of the confusion seems to originate from the fact that Kristiansen and Larsson (2005) preclude the existence of fundamentally different cosmologies, between different geographical and cultural areas, based on their predefined ideas of a uniform pan-European religious and political system (see also Larsson 1997; Kristiansen 2013; 2016). This idea is challenged here, by suggesting that the observed differences between the decentred and centred societies mirrors important structural differences, both organizationally, cosmologically, and perhaps even ontologically, between different societies.

Different Modes of Being-In-The-World

Descola (2006, 139–41; 2013, 112–25) has argued that perception of the world can be divided into four basic ontological categories or ‘modes of identification’ based on whether humans see their interiority and their physicality as similar or dissimilar.
to other human and non-human beings. The four modes are: totemism, animism, naturalism, and analogism (Fig. 8.1).

In Descola’s (2006, 143–45; 2013, 144–71) version of a totemic ontology, humans are believed to share certain attributes of their interiority and physicality (e.g. physical conformation, behaviour, substance) with groups of other beings (different plant and animal species) through shared ancestral links, and through which they differ from other groups of humans and non-humans.

Animism, on the other hand, is the idea that all beings are internally similar, but externally different. Therefore, shapeshifting and shamanism plays an important role in animistic societies. Through metamorphosis, which means experiencing the view of a non-human being, it is possible to perceive the world from a different angle (Descola 2006, 141–43; 2013, 129–43).

The naturalist ontology resembles the modern western ontology and is, roughly speaking, animism reversed (Descola 2013, 172). The differences are ‘behavioural, rather than substantial’ (Descola 2006, 142). Hence, what makes humans different from non-human is not our exteriority, but our interiority: the mind, the soul, language, subjectivity, and morality (Descola 2006, 146).

The fourth and last mode of identification consists of ontologies whereby the world is ordered through analogies (Descola 2006, 145–46; Descola 2013, 201–31). Accordingly, all entities are ‘fragmented into a multiplicity of essences, forms and substances’, which are then reordered ‘into a dense network of analogies linking the intrinsic properties of each autonomous entity present in the world’ — as was the case in Medieval Europe as exemplified through the Great Chain of Being through which the complete and God-given order of the world was explained (Descola 2006, 145). The analogical recombination of different relations and institutions allow for hierarchies and inequality to be legitimized, and analogistic ontologies are thus often to be found in hierarchical and highly differentiated societies such as in ancient Greece, including the Aegean Bronze Age (Shapland 2013, 194). The importance of this observation for the development of the European Bronze Age in general will be elaborated below.

Towards Alternative Bronze Age Cosmologies

Although Descola’s scheme has been criticized for being too simplistic, it provides a useful counterpoint to a modern Western ontological hegemony, as well as a tool with which to identify different ontologies in the past (Watts 2013, 7). Through their structural links with the Aegean world, Kristiansen and Larsson’s (2005, 358) central European centred cosmology fits best into the category of analogism. The concept of the centred cosmology with chieftains, fortified centralized settlements, and religious institutions very much resembles that of city-states (cf. Warmind 1994). One of many parameters by which city-state religions differ from ‘primitive’ religions is through the presence of personified and specialist gods mirroring the growing professionalism and hierarchies in the city-state (Warmind 1994, 6–7). The existence of anthropomorphic gods is well attested in the Aegean Bronze Age, as are built sanctuaries or special purpose structures from which the religious (and often political) elite performed rituals in honour of the gods (Brück 2011, 395). State formations (including city-states) are, however, Near Eastern and Mediterranean phenomena that did not reach Northern Europe before the Late Iron Age/Early Medieval Period. Although religious specialists are evident in the NBA record, and although they probably functioned as mediators through which contact with ‘other’ worlds were possible, the deities of the NBA were most likely not personified or specialized gods trapped in a tripartite division, but rather ever-present ‘forces’ of the world (Warmind 1994, 8).
I agree with Warmind (1994) and others (e.g. Kaul 1998; 2004; Vandkilde 2013) that anthropomorphic gods and a pan-European pantheon were not part of the NBA cosmology, at least not before the very end of the NBA. This is evident in the distinct animistic notions that characterize the NBA cosmology, such as the early NBA ‘shamans’ and notions of shapeshifting and other bodily transformations evident in the Late NBA record (Herbst 1848; Boye 1889; Vandkilde 2013; Ahlqvist and Vandkilde 2018; Goldhahn 2019) (Fig. 8.4). In addition, cosmos, just as liminality, could be established everywhere. Arguably, this is illustrated by the lack of sanctuaries and in the practice of hoarding, which together suggest a dynamic and ‘decentred’ ritual landscape.

Stressing a decentred cosmological structure as a characteristic trait of the NBA fits well with a recent reinterpretation of the utilisation of the early NBA landscape (Holst and Rasmussen 2013). Holst and Rasmussen (2013, 99–101) have suggested that although the archaeological record suggests a strong focus on mobility and cattle herding, the dominant interpretive framework is based on a rather static and anachronistic territorial model (centre-periphery) with a strong focus on agriculture. However, and in accordance with the idea of a ‘decentred’ rather than ‘centred’ society, their model suggests that the Early NBA landscape (at least in south-central Jutland) was organized according to a semi-mobile pastoral society in which parts of the society participated in a seasonal rotation utilising the vast grasslands and heathlands of central Jutland, a utility pattern that can be traced back to the Late Neolithic and Corded Ware periods (Holst and Rasmussen 2013).  

Figure 8.2. The Nordic Bronze Age cosmology epitomized by the journey of the sun and the wheel cross (figure courtesy of Flemming Kaul, © The National Museum of Denmark and Skalk).

Knowledge is Power: The Introduction of a New Cosmology

The change towards an analogistic cosmology was gradual, initiated at the beginning of the NBA by an emerging elite with strong connections to ‘centred’ and distinctly hierarchical societies in the Carpathian Basin and the and Mycenaean. This is for example evident in the rich male NBA IB–II graves containing weapons and other objects connoting a pan-European warrior ideal (e.g. Treherne 1995; Willroth 1997; Vandkilde 2014).

At approximately the same time, the golden age of early NBA barrow building began (Holst 2013, 27). During excavation of Skelhøj in south-western Jutland, it was observed that the layout of the mound was based on the construction of a wheel with a cross-like structure, probably by use of basic geometry including Pythagorean principles and the use of a fixed system of measurement (Holst and Jensen 2015). The knowledge of basic geometrical structures and geometric properties were used in the construction of the barrows, which were aligned with the solar and lunar cycles and the movements of the stars. This suggests a more advanced understanding of astronomy and the cosmos, a development that was facilitated by the increase in trade and exchange with other cultures.

try allowed Bronze Age society to plan, scale, and most importantly, to reproduce geometric patterns. This is most easily seen on elaborate bronzes such as Early Bronze Age belt plates with their precisely executed ornamental bands of spirals (Holst 2015, 53).

The wheel cross is one of many recurring NBA cosmological symbols (e.g. Kaul 1998; 2004). In this context, however, the primary importance of the symbols was not necessarily a fixed semantic substance (e.g. as a symbol of the sun), but the frequency with which they occurred, constantly reminding the observer of a cosmological coherence and social cohesion (i.e. a shared ontology). This is not to say that the sun and the journey of the sun did not play an important role. The sun had been an important symbolic reference at least since the Neolithic, as evident in the form of ‘sun stones’, circular structures of wood and stone and megalithic tombs (Kaul 2004, 389). In this respect, the significance of reproduction cannot be overestimated, as it provided the Bronze Age society or the ‘Masters of Geometry’ with a powerful tool to symbolically reproduce and abstractly express the cosmological order of the world (Holst 2015, 74). Being able to copy and scale geometric figures or plan the detailed outline of a mound was related to the ability to foresee and control the rhythms of the world. Those fortunate enough to be provided with such knowledge probably commanded extraordinary opportunities to improve their social position.

It is generally agreed that the NBA religion was highly institutionalized and based on ritualized chiefly leadership and esoteric knowledge such as bronze casting, long distance voyages, and navigation (e.g. Kaul 1998; Kristiansen and Larsson 2005; Goldhahn 2007). If we add basic knowledge about geometry as suggested by Holst (2015), the people possessing such abilities were provided with a variety of instruments with which to display and maintain their superiority. The role of the incipient elite as transmitters and mediators of new cosmological aspects is also indicated by the introduction and use of the fish, and subsequently the horse, as significant cosmological symbols (Kveiborg 2019; Kveiborg, Ahlqvist and Vandkilde In Press).

The cosmological elements introduced by the new NBA elite were structurally different from those associated with the existing ontology. Originating in the Carpathian Basin and with links to the Mycenaean world, the ideas introduced were structured according to a centred (analogistic) cosmology with a strict division of different spheres, both mentally and physically, and with a completely different rationale (Vandkilde 2014). In order for the new cosmologies to become effective and in order for the elite to display their power, the new cosmological elements had to be orchestrated through the use of readily recognisable and repeatable symbols (like the wheel) and through the incorporation of aspects of the indigenous cosmology (e.g. water and sun). In addition,
new foreign elements such as the ship, the horse, and the chariot became symbols of emerging elites and subsequently acted as cosmological symbols situating the new elite as a link between the spiritual and the corporeal world.

It is important to stress that although a specific ontological mode is often dominant, the different modes are not mutually exclusive (Descola 2006, 147; 2013, 233). Although the topic cannot be adequately addressed in the present work, and thus remains somewhat speculative, it is tentatively suggested that the cosmology of the late NBA was precisely one such hybrid comprised of different world views representing both an existing vernacular (decentred) and a new elitist (centred) ontology (Bradley and Nimura 2013; Holst 2015, 79; see also Andrén 2014, 171). This hybridity is perfectly illustrated in the wheel cross (Fig. 8.2) as outlined by Kaul (1998; 2004; 2005). The wheel represents the dynamic, cyclical, and decentred ‘old’ cosmology. By adding direction (up-down, east-west) through the tripartite cosmology the dynamic (rotation) of the wheel is obstructed, enabling the emergence of a stratified and fixated world and eventually, personified divinities separated from earthly life. Underlying this cosmology was, however, a traditional cyclical cosmology with distinct animistic elements.

The mix-up or blurring of bounded individuals and things is arguably reflected in the deposition of forty spearheads and seven axes from Torsted in Jutland, dated to the NBA period IA (Becker 1964). The weapons were found within a stone structure much like a stone cist, which was the preferred grave type at the time. Apparently, they were deposited in a manner much resembling a ‘human’ burial, indicating that they were imbued with the life of, and acted as substitutes for, the warriors to which they had presumably belonged (Melheim and Horn 2014, 10). This might even involve a recirculation in another world. Alternatively, it has been suggested that the weapons were destroyed and thereby stripped of their biography to be reborn, recast, and transformed into something new (Melheim and Horn 2014). The decentred ontology was still dominant in the Early NBA and the animistic aspects were still obvious during the Late NBA as exemplified, for instance, by the Viksø helmets and in much of the iconography (Kaul 1998; Vandkilde 2013; Ahlqvist and Vandkilde 2018; Fig. 8.3).

From Bronze to Iron Age: Changes in Human-Horse Relationships

At the transition to the Iron Age during the first half of the first millennium BCE, several changes in settlement structures, hoarding, agricultural practices, and burial customs can be observed (for examples: see the introduction). It is suggested that these changes mark a ‘definite’ break with the old decentred ontology. The introduction of iron was probably an important driver in the formation of a new order, breaking with the monopoly of the existing elite and their political and religious scheme.

Concurrently with the above developments at the transition to the Iron Age, a different use of horses can be observed all over Europe. This is evident through the iconographic record that indicates that horseback riding and mounted warfare became increasingly important during the first half of the first millennium BCE (Drews 2004). At the same time, a significant decrease in the traditional use of the horse as a cosmological symbol can be observed.
It is speculated that this development resulted in a gradual change in human-animal relationships and in human attitudes towards the horse, which subsequently led to changes in how the horse was perceived. This change was part of an overall transformation towards an increasingly centralized and territorially bound society as indicated by fenced off villages demarcating the domestic and the wild sphere, permanent special purpose structures (e.g. wooden ritual platforms and idols) from where repeated ritual acts could be performed, and artificial boundaries that functioned as a means of spatial (and mental) control. This transformation might even have increased the distance between friends and foes, humans and non-humans.

Suggestively, the observed development from the Bronze to the Iron Age is also reflected in deposition of human and non-human beings in wetlands as exemplified by the differences observed in the deposition of horses and humans in the Tollense Valley, northern Germany and Illerup Adal in Denmark, two contextually similar wetland depositions from the NBA and the Iron Age respectively (Fig. 8.4).

Horses and Humans from the Tollense Valley in the Bronze Age

The discovery of a thirteenth-century BCE battlefield in the Tollense Valley in Mecklenburg-Vorpommern (Fig. 8.4) has significantly altered our understanding of the character of prehistoric warfare as well as the size, power, and capabilities of European Bronze Age armies, political alliances, and Bronze Age societies in general (Jantzen and others 2011, 2014). The complex consists of a series of sites including findings of mainly human bones along a 2.5 kilometre stretch of river (Jantzen and others 2014, 248, fig. 5). In the context of this article, one of the sites (Weltzin 20) is particularly important, as it contains the largest assemblages of human remains (MNI = 83) found in the valley (Jantzen et al. 2011, 2014; Uhlig and others 2019, 1213). Importantly, an almost total lack of personal belongings at Weltzin 20 indicates that the dead warriors were stripped of their clothes and accoutrements before being deposited in the valley (Jantzen and others 2014, 249; Uhlig and others 2019, 1213).
In addition to the human casualties, bones from four to five horses have been found at Weltzin 20 (Benecke and Dräger 2014; Fig. 8.5). The horses were all young adults and at least two of them were geldings (Benecke and Dräger 2014). There are no indications of deliberate fragmentation of the horse bones, and although post-depositional processes have resulted in disarticulation of the bones, analyses indicate that the horses were most probably deposited as complete carcasses together with the human casualties. In contrast with what has been demonstrated on the human bones, there are no signs of trauma on the horse bones. Furthermore, thorough pathological studies and bit wear analyses of the horses are inconclusive and do not indicate if the Tollense horses were used for riding and/or pulling (Benecke and Dräger 2014; Jantzen and others 2014, 245; Kveiborg 2019, 240). Consequently, it has not been possible to clarify if the horses were used actively in the battle, nor whether they were killed in battle or deliberately killed afterwards as part of a ritual practice.

Iron Age War Booty Depositions

The size of the violent conflict in the Tollense Valley is unprecedented in the European Bronze Age. The most obvious northern European comparisons are from the succeeding Iron Age, the best known being the battlefield of Kalkriese (Moosbauer and Wilbers-Rost 2009), and a series of war booty depositions such as Nydam, Illerup, and Hjortspring (Engelhardt 1865; Rosenberg 1937; Andersen 1956; Ilkjær 2000). Contrary to the Tollense site, the Iron Age war booty depositions generally do not contain human casualties contemporaneous with the main deposition to any significant degree (Rau 2016, 181). They consist mainly of weapons and other personal belongings such as belts, knives, coins, and combs. Most of the sites can be dated to the Roman and the Migration Period (second–fifth century CE), although the tradition has been attested from as early as the mid-fourth century BCE (Kjær 1901; Kaul 2003).

Some of the war booty depositions include horse bones, providing a comparison for the Tollense site. In general, the deposited horses were adult geldings/stallions (Kveiborg 2017, 59–77). Using the four horses from Illerup Ádal as an example, it has been argued that the horses were led to the lake shore
where they were mutilated and killed (Ilkjaer 2000, 102; Dobat and others 2014, 194–96). Afterwards, the horses were deposited in the lake together with weapons and other personal belongings (Fig. 8.6). In this way, the ritual horse killings are structurally comparable with the destruction of weapons and other objects in the Illerup Ádal assemblages (Ilkjaer 2000, 29). The observed ritual horse killing corresponds with what has been observed at other similar sites and can be traced back at least to the fourth century BCE as observed at Hjortspring (Engelhardt 1965, 39–42; Kaul 2003, 141).

In addition, the horses from Illerup Ádal show extensive bit wear and skeletal pathologies, some of which are indicative of intensive use, most probably horseback riding (Kveiborg 2017, 59–77). This is supported by finds of elaborate horse harnesses including bits, saddles, and different strappings in the depositions at Illerup Ádal (von Carnap-Bornheim and Ilkjaer 1996).

Whether the Iron Age sites are the actual battlefields (like at Kalkriese), or if the items were collected on site as spoils of war and deposited elsewhere, humans appear to have been deliberately excluded and deposited elsewhere or left at the battlefield. This is also evident within Illerup Ádal. At Alken Enge (Fig. 8.4), which forms part of the complex ritual landscape in the Illerup River Valley during the Iron Age, bones from more than eighty human casualties have been identified. Like in the Tollense Valley, only a small part of the site has been excavated, and the total number of casualties probably count several hundred individuals (Holst and others 2018). The anthropological analysis indicates that the deceased were predominantly young males — several bones exhibit clear signs of a violent death (Mollerup and others 2016; Holst and others 2018; Mollerup 2019). The deposition of human bones from Alken Enge has been dated to the early first century CE, making it considerably older than the main Illerup depositions. Both sites can, nonetheless, be inscribed in a shared ritual tradition, in which humans and war booty (including horses) were deposited separately.

**Contextually Similar, but Structurally Different Complexes**

Although the two complexes at the Tollense Valley and Illerup Ádal demonstrate a number of similarities, some of which could be ascribed to similarities in the landscape (wetland areas), type of event (post-battle depositions), and to some extent their contents (humans and animals), important differences might also be observed: for example, horses and humans were subjected to a uniform ritual practice at the Bronze Age Tollense Valley, while weapons and other personal objects were deposited elsewhere or reused. A different scenario unfolded in the Iron Age. At Illerup, horses were treated in the same way as weapons and separated from the human casualties. Regarding the increased use of horses as mounts and in warfare during the Iron Age, one might think that this would have increased the social bond between horse and rider compared to previous periods. Nonetheless, during the Iron Age, horses were separated from humans in death and treated differently, as indicated by the different depositions in the Illerup Ádal complex, and other similar sites such as Hjortspring and Nydam (Engelhardt 1865; Rosenberg 1937; Kaul 2003).

To summarize, despite a presumed increase in interspecies engagement during the Iron Age, there appears to have been a less clear distinction between human and non-human beings in the NBA than in the Iron Age depositions. Although the difference might seem minor, I argue that the differential treatment of horses in the two complexes is fundamental, in that it reflects different attitudes towards horses and different perceptions of life and death, humans and animals. On a structural level the changes may further reflect a gradual transition from a centred cosmological system to a centred cosmology involving the introduction of anthropomorphic deities, built sanctuaries, and humanoid idols. It is important to stress that the changes were gradual. The change from a centred and distinctly animistic to a centred analogistic ontology arguably began at the onset of the NBA (c. 1600 BCE) through the transmission of east-central and south-eastern European customs and ideas. Through the entire NBA the two different ontologies hybridized forming a specific NBA cosmology. It was, however, not until the transition from the Bronze to the Iron Age (c. 500 BCE) that the analogistic ontology became predominant, almost totally removing all animistic notions that characterized the NBA cosmology.

**Concluding Remarks**

This chapter argues that observed differences in the treatment of horses and humans in two contextually similar complexes of post-battle depositions from the NBA and the Iron Age respectively reflect a fundamental shift in attitudes towards animals and human-animal relationships between the Bronze and Iron Age. Significantly, the observed changes include the progression from what may be termed an undifferentiated treatment of human and
non-human beings in the Bronze Age ritual practices to a distinct separation of humans and animals in the Iron Age deposits. The observed changes were probably related to several other developments during the mid-first millennium BCE, such as changes in hoarding and burial practices, settlement structures, agriculture practices, and an emerging artificial structuring and partitioning of the landscape. Together, these changes could indicate a fundamental change in the perception of the world, i.e. an ontological 'turn'.

The idea of distinct cultural and ontological differences between the Bronze and Iron Age societies in southern Scandinavia may seem to contradict existing interpretations, which emphasize structural similarities and the longue durée, including presumed similarities in animal symbolism and animistic notions throughout the Bronze and Iron Age (e.g. Kristiansen 2016, 181; Ahlqvist and Vandkilde 2018, 10). Although speculative in nature, the above chapter may nevertheless serve as an attempt to nuance our understanding of the cultural developments in Bronze and Iron Age Scandinavia through alternative theoretical trajectories emphasising obvious differences rather than similarities between the Bronze and Iron Age worlds.

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9. The Stacked, the Partial, and the Large

Visual Modes of Material Articulation in Mälaren Bay Rock Art

Introduction

Research on Scandinavian Bronze Age rock art has traditionally emphasized representative aspects of the images. The different motifs are classified in accordance to what they seem to portray: boats, humans, animals, foot soles, and cup marks, which can be subcategorized further into warriors, sexed humans, different species of animals, various types of weapons, and so on (Goldhahn 2006). Although the iconographic categorisation according to types do not necessarily imply that rock art motifs are mere illustrations, it nevertheless has consequences for how rock art is studied in general. Despite the long-standing research tradition in rock art which has emphasized the importance of context, the landscape, and the location of the rock art in clusters along the shores, interpretations of the images themselves remains static. The motifs are seldom allowed to be other than passive symbols or representations of Bronze Age cosmology, ideology, religion, or everyday life. Recent work on the materiality of rock art has stressed potential agential aspects of the images (e.g. Layton 2003; Jones 2006; 2015; Ling and Cornell 2010; Fahlander 2013; Nimura 2016). These discussions have unmistakable connections to symmetrical approaches that explore the agency of things and how they mediate social processes (Latour 2005; Fahlander 2008; Coole and Frost 2010; Harman 2016). Indeed, a vital aspect of the rock art lies in its physical form. The mediality, the rock, has several important affordances and material properties (e.g. hard and resilient, static and immovable, smooth and textured, etc.) that cannot be separated from aesthetics and the pictorial aspects of the rock art (Tilley 2008; Fahlander 2012; see also Belting 2005). Up to this point, however, much discussion on the materiality of rock art focus on how certain motifs are employed as strategic symbols or possess a vague kind of agency in ‘magical’ terms (e.g. Tilley 2004; Goldhahn 2010; Ling and Cornell 2010). Even though symbolic speculation generally is avoided, the material take in rock art research is still framed by an anthropocentric and representative standpoint. The images are still ‘read’ as depictions of real objects that interact with each other or with the microtopography of the rock in symbolic or narrative figurations. For example, a pecked boat motif is taken as evidence for seafaring, anthropomorphs with swords are warriors, and dense sites with many motifs automatically stand for either greater importance or the aggregation of many people. Such interpretations are not necessarily wrong but reduce the potential complexity of rock art and limit our understanding of the potentially generative roles and effects of the imagery. Since the concept of ‘agency’ in this case is vague and imprecise, I employ the adjective ‘generative’ here for cases where images incite or encourage actions whether they are planned or not.

To release the full complexity and materiality of rock art as a visual medium it is necessary to recognize that a carving of a boat is not equivalent to a real boat. It is a cut schematic figure in the rock that may resemble the outline of a boat. Rock art motifs are not pictures; they are material articulations similar to any other materiality. Even when the intention explicitly is to depict something, the image is nonetheless independently material on its own terms (Harman 2015, 108). The difference is crucial in order to understand how the images shown in rock art may work as actants beyond representation. To further explore generative aspects of the images it is necessary to devote greater attention to the production and use of rock art. Ingold (2010, 91–92) argues, based on Deleuze and Guattari, that
a design is not necessarily imposed onto a material, but rather something that emerges from a dialogue between the producer, the tools, and the material (see also Gormley 2004). This is especially important in magical contexts where the process of making often is the crucial element that allows the images to have the desired effects (Fahlander 2012). The emphasis on production also stresses the becoming of rock art in different processes. For example, images produced with a certain aim can ‘get legs’ and continue to act in various unplanned ways long after the initial production process has ended (Mitchell 1996, 73). Some motifs are made in a single event, while others are recut, transformed, destroyed, and become part of new motifs. The cumulative aspects of rock art, and the continuous production of similar motifs on the rocks, also generate new relations between old and new motifs and the rock over time. Some of these processes are intentional, others are not. But ‘accidental’ visual modes can also develop into intentionally repeated visual expressions over time. These particular conditions of rock art intertwine the images, mediality, and the practice of creation, which situates the resulting rock art somewhere between materiality and practice.

In order to investigate rock art as material articulations, there is a need for other modes of categorisation that emphasize aspects of mediality, production, and relations to a higher degree. In this text I explore three ‘visual modes of material articulation’ which each represent a manner in which rock art can be considered active and potentially generative in social relations. The first concerns the arranging of motifs in stacks, the second deals with partial and unfinished motifs, and the last considers aspects of size. The study is based on a dense cluster of Bronze Age rock art on the northern shore of the Mälaren bay in central eastern Sweden (Fig. 9.1). It is a well-documented and rich cluster, situated at a particularly interesting geographical location, constituting the northern limit of the Southern Tradition of Scandinavian rock art. The rock art in the area comprises a variety of intentional and unintentional patterns in the design and placement of motifs that crisscross between iconographic types and styles. These patterns and relations fostered queries that call for appropriate methods to answer them. The approach thus moves from the bottom-up, rather than applying a general theory or method to the rock art (see Fahlander 2008; Holbraad and Pedersen 2017).

Figure 9.1. Map of the figurative rock art (black dots) in central eastern Sweden with the Boglösa area encircled. The water level is adjusted to Early Bronze Age levels (24 m a.s.l.) (map by author).
Rock Art in the Boglösa Archipelago

The rock art in the Boglösa area, close to the modern city of Enköping in central eastern Sweden, comprises the usual types of Bronze Age motifs — primarily cup marks, boats, anthropomorphs, zoomorphs, foot soles, and a variety of different encircling figures. The majority of the rock art in the area is dated to the Early Bronze Age (c. 1700–1100 BCE), with some continuity into the later part of the period (Coles 2000; Ling 2013). There are also a small number of motifs of possible Neolithic date (Coles 2000, 26; Fahlander 2012; Ling 2013, 82). The geographical position of this cluster of rock art on the northern boundary of the southern Scandinavian tradition is interesting. Border zones tend to develop special social dynamics and a certain degree of interaction between individuals and communities of different traditions and lifestyles are to be expected (see e.g. Hodder 1982; Barth 1998; Fahlander 2018, 114–18). Until now, most interpretations have assumed that the images represent manifestations of local farming communities (Kjellén and Hyenstrand 1977, 27–28), social units (Coles 2000, 109–11), or maritime oriented groups (Ling 2013). However, besides a few Late Neolithic gallery graves, scattered pits, and post holes dated to the whole of the second millennia BCE, there are no traces of contemporary Early Bronze Age settlements or burial in the area (Fahlander 2018, 107–10). This lack of archaeological remains near the rock art makes sense when the water level is adjusted in accordance with the land rise process. During the Early Bronze Age, the water level was c. 2.4 m above present day level and the lake Mälaren was a bay of the Baltic Sea (Fig. 9.1). The majority of rock art was thus produced on small rocky islets quite far out in an archipelago (Coles 2000; Fahlander 2018, 61). In the central Boglösa area the rock art decreases in numbers along waterways that became blocked because of the land rise, but art continues to be produced along routes that are still open. The area thus seems to be a place where one passes through, rather than a site for settled farmer or herders.

However, regardless of why this area was considered appropriate for rock art, and which individuals and groups actually produced it, there is much to learn from the images themselves. The spatial distribution of different types does not reveal any significant patterns besides the general chronological displacements in style. Boats, anthropomorphs, zoomorphs, foot soles, etc. are quite evenly distributed in the area and often found together on the same rocks (Wessman 2010; Fahlander 2018, 68–70). The many boat motifs and their close relation to the water line have promoted theories of the area as a harbour or a landing site characterized by primarily maritime interaction (Coles 2000, 124; Ling 2013, 36). This hypothesis, however, fails to relate such activities to the other motifs (zoomorphs, anthropomorphs, etc.). They too are found on the same rocks, on the same elevation, and with the same close relation to the water’s edge as the boat motifs. This suggests that no simple relations can be drawn between what the different motifs seem to represent and what they may mean. The specific location and context of the rock art also suggest that the aims and purposes were not primarily to produce pictures. For example, the average low visibility of the shallowly cut images makes them hard to spot, and their location by the water’s edge offer no proper place to view the images, nor any space to perform rites in front of them. The traditional art historical approaches that focus on deciphering the meaning or symbolism of visual expressions seem thus less appropriate in this case. There are, however, other interesting patterns related to production and design that cut across the traditional typological categories. For instance, certain regularities in the ways in which motifs are made, how certain motifs relate to each other and the rock, as well as variations in levels of complexity, size, and stages of production. By analysing such variations and patterns in detail it is possible to capture some interesting and important aspects concerning the production and use of the rock art.

Visual Modes of Material Articulation

There are a number of different approaches that try to come to grips with patterns and regularities in visual culture. Some advocate linguistic or syntactic metaphors in terms of visual language (Schapiro 1996), or visual grammar (Kress and van Leeuwen 1996), as a way to illustrate how visual elements are combined into meaningful wholes. In rock art particularly, a variety of concepts have been suggested, for example, iconographical programmes (Sjöstrand 2011, 184), visual tropes (McGranaghan and Challis 2016), visual conventions (Borić 2013), or motems (Fuglestvedt 2018). Some of these are developed as tools for specific cases, while others simply refer to general, thematic visual expressions within a particular visual culture. It is perhaps telling that there is no established terminology for regularities in visual expression within Bronze Age rock art. One reason for this is probably that the grammatical and structural approaches are too rigid for this particular visual medium. Although general patterns exist in south Scandinavian rock art, they are never consistent, and up to this point there exists no plausible
reading of rock art motifs in a general language-like manner. It is obvious that rock art is not structured by grammatical rules, but rather involves a great deal of improvisation and adaptation to local circumstances. In order to cope with such variations of visual expressions, I have somewhat reluctantly employed the term visual modes of material articulation for a series of recurring visual expressions that are not based on iconography or mimesis. As a formal method of categorization, it shares some general aspects with semiotic and structuralist approaches in the way that the pictorial aspects of the motifs are downplayed. The study of visual modes of material articulation, however, is more about identifying and analysing different manners of visual expression; for instance, how different motifs relate to each other and the rock and the ways in which particular details of a motif are prolonged, deepened, omitted, or subsequently added.

Some of these visual modes are intentional designs while others are the result of a cumulative addition of new motifs on the same panel. However, as previously argued, unintentional visual modes or patterns can become meaningful and even intentionally be recreated over time. There is thus no obvious way of differentiating between intentional and accidental patterns, or between social and ritual aspects of rock art. The aims and intentions cannot always determine the way images are understood over time — especially if the area is frequented by different groups with varying lifestyles and origins. The main point in studying rock art as visual modes is what we can learn from how the imagery is produced and used. I have been working with a number of modes in the research area, e.g. the stacking and grouping of motifs, incomplete or unfinished motifs, large and deeply cut motifs, extension and/or oversizing of attributes, hybrids and merged motifs, linking and encircling motifs, and subsequent additions and alterations to motifs (Fahlander 2018). Here I will focus on three of these: the stacking of motives, the incomplete and unfinished, and large, deeply cut motifs which all emphasize generative aspects of the imagery in different ways.

The Stacking of Motifs

Bronze Age rock art comprises various ways in which different motifs are arranged and related to each other and to the natural cracks and fissures of the rock. One especially interesting visual arrangement is the vertical stacks, or columns, of motifs. This is a common feature in south Scandinavian rock art, with some interesting variations. The arrangement in columns is largely restricted to the boat motif, which can consist of more than ten similar types of boats, stacked in single or double vertical rows (Fig. 9.2). This suggests a cumulative process and preliminary studies indicate that the motifs have been added fairly close in time, but not at one single occasion (Fahlander 2012). Tilley (2004, 195) has suggested that the ways in which the boat motifs are arranged on the rocks could reflect a similar social organisation. The boat, he argues, is a metaphor for the society itself, in analogy with certain south-east Asian societies. He proposes that the boat motif represent a ‘fundamental social unit’ and ‘their arrangements in pairs and groups suggests complementary oppositions, alliances and relationships between these
units’ (Tilley 2004, 195). However, such a representational hypothesis makes little sense considering the peripheral location of the rock art and the low visibility of the imagery situated close to the water’s edge.

With or without analogies, the stacking mode nonetheless provides an interesting way of discussing the social effects of rock art. The stacks do indeed seem to be planned, rather than being the result of a random cumulative process. They are quite frequent in the research area and mainly found at strategic key positions where the different waterways meet. Another indication of this being an intentional visual mode are the examples where the stacking mode have been adjusted to local circumstances such as in Boglösa 330, where a diagonal ore in the rock has prevented a vertical arrangement, instead resulting in a diagonal stack of motifs. Although the aims and causes for this particular arrangement are difficult to grasp, the stacking mode provides an excellent way to study how new motifs relate to others in terms of horizontal stratigraphies. The cumulative aspect of stacking can — similar to superimpositions — provide a time depth and offer possibilities to study variations, alterations, additions, and displacements on a smaller timescale than typological chronologies allow (see e.g. Fahlander 2013).

One interesting example is found on the panel Boglösa 73, where a set of double columns of boat motifs has been disrupted by an anthropomorphic figure that has been added into the left vertical columns of boats (Fig. 9.2, right). Instead of simply superimposing this figure, the next boat motif of the column is pecked in a slightly tilted position above the anthropomorph. This break with an established visual mode of arranging motifs can be attributed to a mistake, made by someone unfamiliar with this particular visual mode, but also to a kind of intentional interference — a slight sabotage in terms of an iconoclasm. In either case, such instances nonetheless indicate a parallel use of rock art by groups that do not fully share the same visual culture — and perhaps not even the same ideology and cosmology. This example thus illustrates how rock art can play an active part in the social relations between different groups, who perhaps only met through their respective images inscribed on rock.

**Partial and Unfinished Motifs**

Another interesting visual mode concerns a category of seemingly incomplete or unfinished motifs. Normally, partial rock art motifs are explained as a result of weathering of the rock. Yet a rough estimate suggests that about 15–20 per cent of the images in the research area are incomplete in one way or another, and at close inspection it is evident that certain motifs have never been ‘complete’. This is confirmed by the fact that this particular mode is more or less restricted to the boat and anthropomorphic motifs. Moreover, the zoomorphs found on the same panels as the partial boats and anthropomorphs are complete in the sense that they all have heads and four limbs, as well as ears and tails when appropri...
ate. This bias towards partial boats and anthropomorphs is thus a strong indication that the partial images are not unfinished due to the weathering of the rock but are made to look that way.

The boat motif can be partial in a variety of ways. Some lack details such as crew strokes, a hull line, gunwale, or a prow. Others consist solely of crew strokes or of two parallel lines only. The most common variant is the ‘half boats’ that lack a bow or a stern. While the majority of the boat motifs in the area can be considered ‘intact’, the anthropomorphs are often rarely portrayed with body, head, arms, and legs (Fig. 9.3). A small part of them have extra attributes such as a shield, a sword, or a phallus, but the majority of the anthropomorphs are missing one or more limbs — or even the torso. There are also several examples of pairs of legs without bodies.

Why are so many boats and anthropomorphic motifs incomplete? Coles (2000, 24, 30), who also notes the large portion of partial boat motifs, suggests that the fragments might still have filled their purpose (see also Kjellén 1976, 16); sometimes it may be enough with two slightly bent lines to recognize them as a ‘boat’. Indeed, vagueness is something that archaeology often has difficulties handling. When we look at images we are inclined to fill in details that really are not there, which means that we tend to think of incomplete patterns as unfinished or fragmented. It is only rarely that we try to find meaning and intention behind the imperfect and partial (Flohr Sørensen 2016). Nonetheless, it is evident that many of the boats and anthropomorphs are intentionally made this way.

An obvious reason to why some of the motifs are partial is that they have never been completed for some reason or another. One potential example is a two-metre-long boat motif on Boglösa 131 with only eight crew strokes, which in every other respect is similar to a boat of the same size with no less than seventy-five strokes at Boglösa 109. However, although there is probably a fair number of unfinished motifs, not all partial motifs fit that classification. One example is the ‘half’ boats without bow or stern. It is hard to see the logic in cutting a prow, keel, and half of the gunwale without finishing the other end. The lack of certain details may, of course, convey unknown meanings, in which a half boat means one thing and another without crew strokes means something else. There is, however, no apparent pattern that suggests such a differentiated meaning in which various incomplete motifs can be read.

When it comes to the partial anthropomorphic motifs, Løedøen (2015) has suggested that the incomplete skeleton figures of the Northern Tradition relate to the fragmentary bodies in the Mesolithic burials. A similar relation could also be the case for the Bronze Age burials which also displays a similar fragmentation of the dead (Röst 2016). However, such representational interpretation does not fit the incomplete boat motifs. It is not very likely that these would represent actual incomplete boats in the real world. If we instead view the vague and partial as an intentional visual mode it can be argued that such motifs were made partial for a variety of reasons. For instance, an incomplete figure can catch attention as a ‘punctum’ in Barthes’ (1981, 26–27) terminology; a punctum is ‘a wound or prick’, something striking that sticks out from the picture and is poignant to the beholder. To leave something out can be a clever visual way to actually emphasize something. For instance, in modern marketing and advertising, company logos are sometimes designed incomplete or fragmentary in order to get attention. In this case, the incomplete is argued to evoke a sense of creativity and progression (Hagtvedt 2011).

In an ontological sense, the impartial and incomplete may incite a certain level of unease and insecurity. The desire for order and symmetry is not only a matter of the modern episteme, there are also ethnographic examples where incomplete or unfinished rituals indeed can incite anxiety and stress (Strecker and Lydall 1979, 183). The fact that the rock art is rather difficult to perceive after a few years of weathering may perhaps represent a counterargument to the proposed idea that partial motifs were deliberately made to evoke interest or incite action. However, this visual vagueness of the rock art may actually have been an important aspect to how they were experienced. Today the faint lines are often traced by a tactile reading of the fingers which has probably always been a part of how rock art was experienced. Rock art may thus be as much felt as it was perceived with the eyes (Tilley 2008, 45). When a line you follow with your fingers unexpectedly stops, or takes an unexpected turn, it would certainly evoke a moment of surprise and curiosity. The same goes for the vague and partial motifs that may be too fragmented to be properly recognized as a typical motif.

A partial image may from such a perspective also work as a materialized incentive for completion, that is, an image consciously made incomplete to encourage (or even demand) secondary actions. Such secondary effects are, of course, difficult to establish, and for which we need more elaborate methods. One example is a partial zoomorphic motif on the Swedish west coast that only consists of a pair of legs, a tail, a head, and a neck, but no body. By the aid of detailed laser scanning it has been possible to identify faint scratching marks over the area where
the body should have been (Fahlander 2012). It is not feasible to determine how much time passed between the cutting of the motif and the secondary scratching, but the example is one indication of how the partial and incomplete indeed may encourage secondary actions.

**Large and Deeply Cut Motifs**

Size and cut depth are other interesting parameters with significant importance for certain categories of rock art. In Scandinavian Bronze Age rock art, there is a standard range of sizes of which the majority of motifs fall into. The normal length of the boat motif ranges from between 20–70 cm and the anthropomorphs are generally between 15–25 cm in height. However, the Boglösa area also has a small group of really large motifs, particularly anthropomorphs, boats, and a few encircling motifs that can be measured in metres. Indeed, a normal sized boat motif of c. 50 cm is not the same as a stylistically identical but 2 m long one — not to mention the over 4.2 m long Brandskog boat (Boglösa 109) (Fig. 9.4). In a basic sense, size is all about perspective; something is only larger or smaller in relation to something else. In accumulated materials, differences in size may be a result of a series of displacements over time and may thus constitute a time horizon.

Matters of size also include a material component. Stone, for example, is often unsuitable for detailed elaboration. If the aim is to make an anthropomorphic rock art motif with a sword, the figure needs to be of a certain minimal size in order for this to show. Size is also related to visibility. The larger and deeper cut, the more visible the motif is from a distance. However, the two-metre-long boat motifs discussed above are of the same cut depth as the normal sized ones, and are not really large enough to be significantly more perceptible. The fact that they still are ‘unnecessary’ large is, however, still interesting and no less meaningful. We can make sense of the enlargement of a motif by perceiving the carvings as a type of votive offering with a magical purpose, in which size is related to the impact of the gift (Fahlander 2012). The value of a votive image may vary from the person who made it, to the tools, the precise place, the time of the day or year, or in terms of aesthetical elaboration. Size is another factor that affects the value of a gift in terms of energy expenditure. To make a large, deeply cut motif is considerably more time-consuming than making a normal-sized one.

The group of very large, deeply cut motifs in the Enköping area are few in number. Besides the large Brandskog boat, there are also three anthropomorphs of which two are partial, and five are encircling motifs. The majority of these extra-large motifs can stylistically be dated to the last phase of rock art production in the area (c. 900–700 BCE). Although the encircling motifs cannot be dated in terms of style, they all superimpose older motifs and are clearly later additions. Interestingly, these large motifs differ from most other late motifs by...
their position on the rocks. While the majority of rock art follows the receding waterline over time, the large motifs are often cut on panels of higher altitude (c. 25 m a.s.l.) together with old motifs from the Early Bronze Age (Ling 2013, 30). There can be many reasons for this development, but one hint is found in the ways that the large motifs seems to copy older, normal sized, motifs. One example concerns anthropomorphs with round bodies, sometimes referred to as ‘shield bearers’ or ‘sun carriers’, which is copied in all respects from the c. 15 cm original to a 1.6 m high figure at Boglösa 298. At Boglösa 94, a 50 cm long pair of legs similarly refers to a pair of legs that are five times smaller on the same panel (Fahlander 2018, 76).

These displacements in size might indicate the impact of the irreversible physical changes in the archipelago because of the land-uplift process. When the water receded from the rocks and the waterways became cut off, the special properties of the area that made it suitable for rock art may have no longer worked in the ways they used to. For example, if the rock art are primarily magical devices that depend on a close relation to water to have effect, the increased size could be one way to compensate for the increasing distance between the outcrops and the water during the Late Bronze Age. The changed options for movement in the area could also have an effect on the social circumstances of the creation of rock art. When former sea became new land, other groups may have been populating the area who had little or no relation to the old tradition of cutting images on the rocks. Indeed, the changes in visual expression suggest quite a different idea of rock art during the last period of activity, in terms of a reorientation or misunderstanding of the original idea. After at least 800 years of rock art production, almost all smooth rocks in the area have become more or less filled with images. Although they may be difficult to see, they would nonetheless been noticed by people moving about in the area (as they still are today). It is therefore not farfetched to assume that this world of images could have encouraged ideas about their origin and meaning that incited a brief period of renewed image production that accentuates size and visibility.

**Imagery in Action?**

The three visual modes discussed here all contribute interesting information to the aims and meanings of the rock art in the Boglösa area during the second millennium BCE. These visual modes are not limited to the Mälaren area but are found all over southern Scandinavia — and indeed also in the Northern Tradition of rock art (see Fahlander 2012; 2013). As this study indicates, the rock art is intertwined with specific geosocial and physical circumstances; because one site of Scandinavian rock art never is the same as another, it is important to keep the discussion specific in order not to let regional variability obscure local patterns. Although the patterns discussed in the Boglösa area may hold general validity, the visual modes are nonetheless likely to differ, adapting to other local circumstances. Some of the characteristics of the visual modes, such as size, are also relative and are likely to be employed in different ways (Fahlander 2019).

By focusing on the becoming of the imagery and temporarily bypassing the iconographical content, the study provides an apt platform to discuss the potential generative effects of the images. The archaeological discussions on this issue seldom leave the theoretical level in which varying degrees of ‘agency’ is postulated. It seems harder to actually show that images indeed do things other than by the design and intention of humans. One key aspect is the misconception that things either have agency or not. In a relational perspective, agency is not a quality but a relational effect (Barad 2003, 826–27). Working as symbols, images may indeed be active as Hodder (1982) has suggested, but they are not really ‘acting’; they are rather symbolic vehicles employed by human agents. Gell’s (1998) ideas of secondary agency have recently been widely adopted in rock art studies (e.g. Layton 2003; Osbourne and Tanner 2007; Ling and Cornell 2010). According to Gell (1998, 69), works of art can embody human agency that affect people coming into contact with them. It is, however, important to recognize that his examples are set within a magical ontology in which humans and non-humans (including works of art) are not clearly distinguished. In western societies, images may work in similar ways, but more in the form of subliminal effects designed by an artist or an advertising agency. The key point is that images can indeed work at a distance and through time in terms of calculated intentions with or without magic. A third type of agency concerns the various effects of material imagery that are not designed or planned. Such generative aspect often goes under the awkward term ‘material agency’ or ‘object agency’ (Jones and Bovine 2010). Very few, if none, would argue that objects and abiotic matter do not have consequences, but some object to the term ‘agency’ which is considered a quality restricted to sentient beings only (Hornborg 2017, 97–99). It is, however, mainly a matter of terminology; after all, human agency is not always intentional and conscious either (Latour
Thus instead of 'agency', the adjective 'generative' is better suited for cases where images incite or encourage actions whether they are planned or not. Such a concept is necessary for us in order to understand how places and sites with rock art develop over time. It can never be a question of human agency and interaction only, there must be room for the images themselves to play an active part in the becoming of the world.

### Summary

In this chapter, Bronze Age rock art is discussed as an active and integrated materiality that is entangled in social relations in different ways. The traditional manner of primarily studying the images as vehicles for meaning or symbolism is here displaced in favour of a greater concern with the mediality and production of individual motifs as material articulations. A key tenet is that rock art images have a potential to incite actions, and to affect the course of events, rather than being passive reflections of an ideology or cosmology. There is clearly a need to explore avenues that take a more reciprocal view of rock art images, also including aspects of production, maintenance, viewing, responding, and alteration of the images, where they can have generative roles. The study of rock art in terms of 'visual modes of material articulation', accentuates a missing link in understanding the roles of rock art images in social development. By emphasising issues of mediality, production, and a continuous engagement with the images, it is possible to extract new information from the material. Three different visual modes are discussed here: the stacking of motifs, the partial and incomplete, and the extra-large motifs. They illustrate three different ways in which rock art images can be considered generative; the first mode illustrates how rock art can work as an integrated materiality in social relations, the second shows how the incomplete and partial may have been generative in terms of secondary agency, and the third mode considers size and cut depth to show how images can generate new images, thereby having material agency.

By discussing rock art in terms of visual modes, the dilemma of representation and mimesis can partly be bypassed, making room for analyses of what the images actually do and the ways in which they act on the people engaging with them. The focus on the production and use of rock art as material articulations rather than pictures thus involves a change of perspective from what we as humans do with rock art images, to what the images do to us. In this way rock art is allowed to be an integrated materiality in social developments, potentially being generative and playing an active part in the making of history.

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10. Ritual or Mundane?

Scandinavian Tar Loaves from the Bronze Age

Introduction

Tar loaves, circular or disc-shaped aggregates of tar, have been offered comparatively little attention within Bronze Age research. As stray finds predominantly found prior to the establishment or during the infancy of most museums in Scandinavia, their contextual information is sparse. In addition, the introduction of modern peat cutting machines has severely limited the chances of finding more tar loaves; according to available literature and museum database surveys, no new tar loaves have been found in Scandinavia since 1928 (Oldeberg 1974; Streiffert 1994; Weiler 1994; Dal 1998). This makes the 2010 discovery of two tar loaves in a peat bog at Herøy in Møre og Romsdal, western Norway significant. Chemical analysis (GC-MS) conducted on the Herøy finds indicates that they were produced at the same time. This, along with the fact that many tar loaves are found in pairs, is suggestive of a ritual interpretation.¹

In the first part of this paper, we present the Scandinavian tar loaves, discuss the use of birch bark tar and consider some of the more mundane or practical reasons for depositing tar loaves in wetlands. In the second part we discuss the tar loaves in the light of twin symbolism, arguing that the tar loaves were used as ritual paraphernalia in dramas re-enacting the deeds of the Divine Twins (Kristiansen and Larsson 2005, 305). Tar has traditionally been used for caulking and tarring ships, and it is therefore hypothesized that the tar loaves represented the Divine Twins’ role as protectors and rescuers at sea.

The Tar Loaves from Herøy, Norway

Herøy is a municipality in Møre og Romsdal County in the western part of Norway. The first traces of habitation in the area dates to the Mesolithic, but the finds are rich and diverse especially from the Late Neolithic and Bronze Age, corresponding to the pioneering phase of agriculture in western Norway (Kleiva 1996). In 2010, a survey was conducted by the county archaeologists at the Hjelmeset farm in Herøy due to planned construction of new houses (Dahl 2010). In one of the test trenches, two tar loaves were found next to each other half a metre deep in the peat bog. One of the tar loaves was partly fragmented due to infiltration of plant roots. It must, however, be deemed as highly likely that the tar loaves were both undamaged when they were deposited in water during the Bronze Age.

The tar loaves from Herøy are both circular, approximately 16 cm in diameter and around 8 cm thick. The weight of the most complete tar loaf is 600 g, while the partly damaged loaf weighed just less than 500 g. Both tar loaves have a hole in the middle. The loaves have a light greyish-brown surface colour, but the cracks and damaged areas expose a black interior (Fig. 10.1).

Chemical analyses using gas chromatography coupled with mass spectrometry (GC-MS) were performed on both tar loaves using an Agilent 7890A Series GC system fitted with an Agilent DB5-ms UI 15 m × 2.5 mm × 2.5 mm column, connected to a 5975C inert XL triple axis mass selective detector. The GC-MS analyses identified the main constituent in the loaves as birch bark tar. The tar was mixed with finely shredded birch bark and crushed charcoal, creating a workable material that could be made into loaves. The surfaces of the loaves are

¹ See Kristiansen and Larsson (2005, 280) for a discussion of twin symbolism and rituals.
covered in palmprints and fingerprints, indicating how the loaves were shaped.

The chemical profile of the two tar loaves is almost identical; the most likely explanation for this might be that the two tar loaves were made from the same batch of tar. While this is not only a strong argument for their simultaneous deposition, there are other implications of the chemical analyses that will be explored in more detail later in this paper.

**A Short Review of the Scandinavian Tar Loaves**

Tar loaves have predominantly been found in south-western Sweden and in Denmark, but some have also been found on the eastern coast of Sweden (Dal 1998). In Norway, the only confirmed find apart from the Herøy tar loaves is from Leksvik in Nord-Trøndelag found in 1856 (Rygh 1874, 55). The Leksvik find originally comprised a pair of loaves, but one loaf was very fragmented and therefore was not preserved.

Most of the tar loaves were found during the nineteenth and early twentieth century due to traditional peat cutting. As is evident from the distribution map, the vast majority of tar loaves have been found in peat bogs (Fig. 10.2). Unfortunately, the loaves were not always kept or handed over to museums. Some were kept in private collections or the finds were split and separated; many tar loaves have therefore been disassociated or lost (Dal 1998). The total number of tar loaves found to date is therefore difficult to establish, but approximately seventy-two tar loaves can be accounted for. The number of tar loaves is based on combined literature reviews and museum surveys.

Tar loaves have a rather standardized appearance being more or less circular or disc-shaped with an average diameter of 17–22 cm. They are often flattened, tapering towards the edges, but can sometimes be more rounded like the Herøy loaves. Their thickness varies from 3 to 8 cm. The majority of tar loaves have a hole in the middle, although there are a few examples of unpierced loaves. Their average weight is 350 to 650 g, but there are also larger ones weighing up to 1800 g with a diameter of 29 cm. When discussing the weight of tar loaves, however, degradation, partial fragmentation, and possible post-excavation treatment must be taken into account.

Dating tar loaves indirectly is challenging since they were seldom found in secure contexts with other artefacts. Apart from the Norwegian tar loaves, only four Swedish tar loaves have been 14C-dated (Dal 1998). A recalibration of the older dates (with 2σ) using CALIB Rev. 7.1.0 (Stuiver and Reimer 1993) demonstrates that the Swedish tar loaves date from 1390–790 BCE, i.e. from Period III to the early Period V of the Nordic Bronze Age. Both the Norwegian finds are older, as the Leksvik loaf (T484) has been dated to 1450–1291 BCE (Period II) (Henriksen 2014, 386), whereas one of the tar loaves from Herøy (B 16935.2) was 14C-dated to 1690–1520 BCE (Period I), making it the oldest dated tar loaf currently documented.

**The Use of Birch Bark Tar in Prehistory**

Before we move on to explore the interpretational implication of the tar loaves it seems appropriate to provide a short review of the use of birch bark tar during prehistory. In recent years, chemical analyses have confirmed a widespread use of birch bark tar during European prehistory. Birch bark tar is obtained from the destructive heating of the bark of birch trees (*Betula spp*) (Aveling 1998). In the Mesolithic and Neolithic, birch bark tar served as a universal adhesive with a wide array of uses such as hafting arrowheads and microliths to their shafts (Aveling 1998; Regert and others 1998; Larsson, 2000).
Sjöström, and Heron 2017). In addition, birch bark tar was also used for waterproofing fishing nets and for tarring and caulking boats (Hernek and Nordqvist 1995; Crumlin-Pedersen and Trakadas 2003). During the Early Iron Age birch bark tar was widely used in Norway, Sweden, and even Finland for caulking lath-walled bark or wooden containers (Lähdesmäki 1995; Svanberg 1995; Nordby 2012). Due to its antiseptic properties, birch bark tar was chewed and pieces of birch bark tar with tooth impressions have been found on several sites across northern Europe dating from the Mesolithic to the Viking Age (Bang-Andersen 1976; Hernek and Nordqvist 1995; Aveling and Heron 1999; Nordby 2003).

During the Bronze Age, birch bark tar was reportedly used for sealing funerary urns as well as for inlay in bronze decorations (Brøndsted 1939, 231, 272; Broholm 1943, 133). In addition, lumps of tar have been found in inhumation burials dating from the Bronze Age and the Early Iron Age (Shetelig 1912; Floderus 1931; Løken 1979). The most spectacular find of birch bark tar from the late Bronze Age is from Lusehøj, Fyn in Denmark, where a layer of birch bark tar with fragments of amber and bronze was placed on the interior of the lid of a bronze burial urn (Thrane 1984).

Lumps or fragments of tar have also been found at Bronze Age and Early Iron Age settlements sites (Becker 1990; Bergström 2004). Bergström (2004, 9) has interpreted lumps of tar found in postholes as building sacrifices or inaugural offerings. However, the lumps or fragments of tar found at settlement sites and in burials are not of the same sizes or appearance as the tar loaves and are as such not directly comparable to the tar loaves found in peat bogs.

### The Practical Purpose of Tar Loaves

There are a number of more mundane or practical reasons for depositing tar loaves in wetlands. With low and stable temperatures and low oxygen levels, these wet deposit sites would have been particularly good places for storing tar loaves as they become soft and sticky at elevated temperatures. The Danish archaeologist Johannes Brøndsted (1939, 272) similarly assumed that the holes in the tar loaves fulfilled a practical purpose as they could be strung up and tied together to facilitate transportation. Stringing of the tar loaves would also be convenient when storing them in ponds and lakes to aid retrieval. A piece of string was reportedly found in association with a pair of tar loaves from Digemose in North Jutland in Denmark, substantiating this interpretation (Becker 1990).

The Danish archaeologist Carl Johan Becker (1990) assumed birch bark tar was imported from central or northern regions of the Scandinavian Peninsula to Denmark during the Bronze Age. Their distribution in close proximity to the sea or water routes has also been taken as an indication that tar loaves were of significance as exchange or trading items (Weiler 1994, 108; Dal 1998). Streiffert (1994) suggested that tar loaves could be interpreted as a form of specialized craftsmanship, which created goods for exchange. The rather standardized appearance of tar loaves could underpin the interpretation of both exchange and a specialized practice.

There are, however, other aspects regarding tar loaves and their depositional contexts that support a ritual or symbolic interpretation. Although the definition and identification of ritual has long been a
subject of debate in archaeology, there seems to be some agreement that ritual activities can be identified archaeologically, for example, by looking at how certain objects and activities are set apart from others (Garwood and others 1991; Verhoeven 2011, 126). For example, a large number of studies have demonstrated that the deposition of artefacts in wetlands was a particularly widespread custom in the Bronze Age (e.g. Needham 1988; Bradley 1990; Randsborg 2002; Yates and Bradley 2010; Henriksen 2014; Melheim and Horn 2014; Bradley 2017). Because the deposited items would have been difficult to retrieve and are often too valuable (in terms of cost and rarity) to represent accidental losses, they are usually interpreted as the remains of ritual activities.

Also supporting a ritual interpretation is the fact that many of the tar loaves have been found in pairs. Twin symbolism was an integral part of Bronze Age religion (e.g. Kaul 1998; Bradley 1990; Randsborg 2002; Kristiansen and Larson 2005, 269–82; Melheim 2006, 74, 131), and the presence of this symbolism in hoards containing tar loaves may suggest a ritual purpose (Fig. 10.3).

Twin Symbolism and its Cosmogonic Origin

From the beginning of the Early Bronze Age, twin symbolism was applied in a variety of ritual contexts, an example being the double male burial at Leubingen in Germany, dating to about 1940 BCE, which Kristiansen (2013, 91) interprets as belonging to a pair of twin rulers. Twin symbolism is also reflected in Bronze Age iconography, such as on the pictorial slabs of the Kivik grave (Kristiansen and Larson 2005, 269), and in ritual hoards, famous examples being the scimitars from Rørby in Denmark (Aner and Kersten 1976, Tafel 141) and the lurs from Brudevælte in Denmark and Revheim in Norway (Broholm, Larsen, and Skjerne 1949, Plate 1–6, and 21–23). Other well-known twin depositions include the cult axes from Lunde in Vindafjord, Norway and Eggebak in Vendsyssel, Denmark, the gold bowls from Borgbjerg Banke in Boeslunde, the twin figures from Grevensvang in Næstved, and the two-faced, horned bronze figure from Kallerup in Thy, all from Denmark.

Twin symbolism is linked to a belief in the Divine Twins, a set of twin brothers found in nearly all Indo-European pantheons. In fact, few mythological themes are as consistent or as widespread among Indo-European groups as that of the Divine Twins (Mallory and Adams 1997, 161). They are called the Asvins in Hindu mythology and the Dioscuri (Castor and Pollux) in the Greek and Roman traditions, and they were the main gods of the Nordic Bronze Age, in addition to the sun god or goddess. Their worship persisted until the end of the Bronze Age, when new gods made their appearance in the form of the Æsir gods (Kristiansen 2013, 83).

The Divine Twins are usually depicted as the sons of the sky god and brothers of the sun goddess or maiden. They appear in numerous myths and legends, which vary only slightly among the different traditions (Mallory and Adams 1997, 165). Most often, these tales involve the rescue of the sun goddess, who is captured and held prisoner at night, with her twin brothers coming to her rescue so the sun can rise again in the morning (Mallory and Adams 1997, 161). Rescue is a recurrent theme in the career of the twins, and they are also known as guardians and rescuers of sailors. They were the patron deities of sailors who they save from shipwreck and to whom they could send favourable winds (Mallory and Adams 1997, 164). They were also known as helpers in battle, magic healers, master musicians, and dancers.
Ritual Dramas

Scandinavian Bronze Age rock carvings frequently depict possible attributes of the Divine Twins such as lur blowers, axe bearers, acrobats and dancers, sun symbols, and boats (Kristiansen 2012). Some of the objects associated with the Twins, such as axes and lurs, also occur in ritual hoards. A possible interpretation pointed out by Kristiansen and Larsson (2005, 305–06) is that they were used in ritual performances of myths. Ritual drama was common in many ancient religions, including Greco-Roman and Egyptian traditions, but it was different from theatre as we think of it today entailing a performance on a stage before an audience (Nielsen 2000; Leprohon 2007; Zarrilli and others 2010, 52–102). The performers in these dramas were, at least in the beginning, primarily priests or ritual leaders and the dramas were mostly performed at the great spring feasts (Nielsen 2000, 107–10). Although such dramas may have served multiple purposes, they often involved dramatic re-enactments of mythical stories such as fights between a god and a monster or a marriage rite (hieros gamos), and the characters were often mythical heroes or historical figures (Nielsen 2000, 109; see also Carr and Novotny 2015, 86–89).

Ritual dramas appear to have been common in the Bronze Age of Northern Europe as well. In fact, according to Kristiansen and Larsson (2005, 352–53), it was precisely because of such rituals that Bronze Age mythology could be preserved and transmitted down through the millennia in nearly unchanged form. The Bronze Age, according to them, was a great period of ritual and social performance, which included everything from ritual processions to feasts, dances, war games, and the singing of songs and hymns. In support of this, one could mention the many horned and masked figures, acrobats, musicians, and dancers on the rock carvings from the Bronze Age which probably depict scenes from ritual dramas.

Magic Healers and Rescuers at Sea:
Tar Loaves and their Symbolic Meanings

As stated previously, tar is well known for its antiseptic and waterproofing properties (Aveling and Heron 1999; Kuznetsova and others 2014). However, beyond their practical purpose, tar loaves may also have had an important symbolic value, perhaps linked to the Divine Twins. Many ancient myths tell of the Divine Twins and their role as magic healers; both the Asvins and the Dioscuri were credited with healing powers. They were miraculous physicians, who could cure the sick and heal the wounded. Known for their magical powers, the Asvins also served as the physicians of the gods, protecting them from illness and misfortune. In addition to being healers, the Divine Twins were known as rescuers at sea. For example, in the Rig Veda, there is a story about Tugra’s son Bhujye, who was drowning in a shipwreck when the Asvins came to the rescue (Nikolalev 2012, 570).

The use of birch bark tar for caulking and tar-ring ships as well as its antiseptic properties fits well with the Divine Twins’ function as guardians and rescuers of sailors and healers of illness. In the same way that axes and lurs may have been used to re-enact the Twins’ heroic adventures (the axe representing their status as warriors and helpers in battle, and the lurs their role as master musicians), the tar loaves may have been symbols of their courage and bravery at sea as well as symbols of protection and healing.

There is, however, yet another way in which the tar loaves may have represented the Divine Twins. As previously stated, the two tar loaves from Herøy had almost identical chemical profiles suggesting they were made from the same batch of tar. Thus, the tar loaves were not only twins in their function and shape, but also twins in the sense that they were ‘born’ or produced at the same time, through dramatic events where high temperatures and fire were used to transform birch bark into tar.
We suggest that the tar loaves were used in myth-based rituals to symbolize the Divine Twins. They may have been used as props to help the audience imagine the scene, thus making it seem realistic. According to Mircea Eliade (2005, 28), one of the twentieth century’s foremost interpreters of religious symbolism, the main purpose of a ritual is to re-enact the deeds of gods and heroes who lived in the mythical past. According to him, all rituals are repetitions of the primordial cosmogonic act; a re-enactment of illud tempus, ‘those days’. If Eliade’s claim is right, and we believe it is, then bog finds of lurs and axes, which traditionally have been thought to represent offerings, could rather be remnants of ancient ritual dramas that were disposed of as ceremonial ‘trash’, because they were worn-out, or considered too dangerous to remain in the mundane world.

This suggestion is hardly controversial; it is now widely acknowledged that objects have agency (e.g. Latour 2005; Barad 2007; Boivin 2008; Webmoor and Witmore 2008; Olsen 2010; Edgeworth 2012; Hodder 2012). Objects are not only symbolic representations of cosmological beliefs, but constitutive of the very beliefs that make up our cosmology and worldview. They assign credibility to myths and consolidate narratives through their physical and tangible qualities. Hence, by engaging with and manipulating objects through rituals and myths, legends are performed and made real in the present.

Some Final Thoughts on the Contrasting Ritual/Profane Dichotomy

There are two further points to be made. As noted earlier, the tar loaves are round or disc-shaped. The reasons for this could be to facilitate transportation and storage; however, disc-shaped objects also appear in Scandinavian rock carvings, where they are commonly interpreted as sun symbols. Sun symbolism is also present in female elite burials from the Early Bronze Age, in the form of sun disc-shaped bronze belt plates. Large, perforated amber discs also occur in male burials from the slightly earlier Single Grave/Corded Ware culture offering an interesting parallel to the disc-shaped tar loaves (Fig. 10.4). Amber has long been a symbol of the sun due to its golden, bright colour. Worn as an amulet, it may have provided its owner with everlasting life and strength. Some form of sun symbolism may thus have been present in the Corded Ware culture, expressed, among other ways, in the grave goods and in the spatial orientation of the graves (Randsborg and Nybo 1984, 172–73). The association of disc-shaped objects with sky powers may, at least in part, account for the frequent use of such objects in ritual contexts.

Lastly, one cannot overlook the fact that the tar loaves were deposited in wetlands such as lakes or bogs. The significance of springs, bogs, and lakes as places for ritual activities is well attested to in the archaeological record (Karsten 1994; Koch 1998; Kaul 2003). It is worth noting, in this context, that some of the bogs where the tar loaves were deposited also contained bronze daggers, flint knives, sickles, and even a palstave. When found in bogs and wetlands, these objects are often thought to represent offer-
ings (see for example Karsten 1994; Kaul 2003). The possibility therefore exists that the tar loaves were placed in bogs and lakes as sacrificial offerings. Tar was probably considered a precious material and a suitable offering due to its unique properties.

In arguing for a ritual interpretation, however, we are not advocating an either/or approach to the interpretation of the tar loaves. Instead, we demonstrate how tar loaves move fluidly between the ritual and the profane, blurring the boundaries between worlds (see Brück 1999; Bradley 2005). Far from being contradictory, their practical and ritual uses are found to be inseparable. For example, in the same way that tar may have derived its ritual importance from its ability to heal and cure, to caulk, repair and seal, ritual is often an integral part of healing, and may also have been important in the process of caulking a ship. Rituals of boat construction are well known from ethnographic sources, for example in Indonesia (Barnes 1996; Stacey 1999). Thus, a ritual understanding of the tar loaves does not exclude other interpretations, such as those discussed earlier in the paper. As with most areas of archaeological research, divisions and borders are fluid and unstable, and may change according to context.

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11. Identifying and Investigating Diversity

New Perspectives and Possibilities
Within Scandinavian Rock Art Research

Introduction

The landscape location of Southern Tradition rock art in West Norway, believed to date to the Bronze Age (1700–500 BCE) and pre-Roman Iron Age (500 BCE–0 CE), arguably contrasts with the trends expected from other parts of Scandinavia for the area under discussion in this article.1 In some areas, such as in Bohuslän and Uppland, rock art is concentrated near to shorelines, whilst in other areas, it is incorporated as part of funerary practices: on grave slabs, in cult houses, or on the small stone slabs covering cremation urns. Cup marks are found within field systems across much of Denmark as well as northern Germany and Estonia. They also occur regularly on the cap stones and orthostats of passage graves in Denmark, northern Germany, and southern Sweden. West Norway has sites which conform to some of the above trends, such as the instances of ship carvings found along the inshore shipping channel (see e.g. Linge 2006; 2007).

This study investigates some of the aspects that are more particular to the location of, mainly, Southern Tradition rock art in West Norway. Therefore, the aim is to investigate the proximity of rock art locations to the sight and sound of water, as well as the relationship between the figures and features of the surface that suggest links to water symbolism. The study fulfils these aims by presenting the results of fieldwork undertaken in the area by the author at a small sample of sites, mostly located within a few discrete areas. We begin by examining the rationale behind the project, before summarizing previous research, including selected factors that have been suggested as significant in determining the location of Scandinavian rock art. Field technique is briefly discussed together with the location of the study sites. This is followed by a section highlighting key results. The findings are then contextualized, and some conclusions offered.

Why Study Landscape?

Most remains of the past are poorly preserved. In only a few cases do we feel that we can come somewhat near to what might be called a reality of the past. Even in the most exceptional circumstances, we are still left with only the tangible remnants. The social structure, belief, and social interactions of daily life are missing. However, archaeologists try to work with the fragments that are preserved to construct theories and arguments toward an interpretation. As we attempt to scale Hawkes’ (1954) ladder of inference, we are forced to rely more and more on the weight of interpretations. As we move further and further away from things which are certain, probable, or possible, the potential for variations in our interpretation increases. However, if we maintain a focus on thoroughly understanding the elements that are tangible and fixed, it is more likely that our subsequent constructions will come closer to the reality of the past.

The author wishes to propose three key aspects of rock art that can be studied with a fair degree of confidence: content, style, and landscape location. Of these three, the latter, landscape, is the main focus of this work, although one must always be mindful that it is a palimpsest; a product of change over time. Location can be thought of on two levels: land-
scape location and the rock surface. One of the great strengths in studying location is that, in many cases, it is unaltered. Thus, the absolute location of the art can be studied in relation to other panels, other archaeological remains, and elements of the natural environment, including the rock surface. In the case of the rock surface, this can often be studied even if the art has been moved from its original context.

The contention that 'the observable distribution of ancient monuments and artefacts is supposed to have a wide range of ideological and social implications' is not a new one (Bertilsson 1987, 2). Several influential works within the field of Scandinavian rock art take this principle, suggested by Bertilsson, as their starting point (Malmer 1981; Sognnes 1987a; 2001; Mandt 1991; Ling 2008). However, the lenses which we use to view and analyse distribution, and the features we choose to focus on, change over time as our thoughts develop and become attenuated to new aspects. Some of the new aspects being considered include more nuanced views of spatial connections between water and rock art (Sognnes 1994; Goldhahn 2002; Dodd 2011), and relationships between the physical location of figures on the surface in relation to openings in the rock surface (Jones 2005; Jones et al. 2005).

**Landscape Location and Hints of Regionality**

The western Norwegian landscape is one of contrasts. In the west lies a landscape characterized by the sea, fjords, islands, and skerries. Inland, to the east, lie upland mountainous areas. Nestled in between and amongst these two areas are the places most conducive geologically and climatically for habitation. Even so, juxtapositions abound. For example, the three largest fjords of West Norway: Sognefjorden, Hardangerfjorden, and Nordfjorden enjoy sheltered microclimates. Temperatures regularly reach 30°C in high summer on the sides of the fjord, whilst in the high mountains above, cooler conditions permit the existence of glaciers. This geographical setting provides a variety of landscapes and conditions, which are very different from, for example: Østfold in southern Norway, Tanumshede in Bohuslän, western Sweden, or Denmark.

When looking at the location of sites in western Norwegian rock art, variance with south Scandinavian derived models begin to emerge, be they theoretically, statistically, geographically, or topographically based. Despite the differences in the character of the terrain previously outlined, there is a great mixing and matching of hypotheses from other areas, together with local and regional observations. Whilst it is conceivable that the relationships between the art and the natural environment, proposed in other regions of Scandinavia may differ (Bradley 2000; Wahlgren 2002; Nordenborg Myhre 2004; Goldhahn 2008a, 140–41), the extent of similarity and difference of the relationships in the different regions is not fully understood.

**History of the Study of the Landscape Location of West Norwegian and Scandinavian Rock Art**

Discussions concerning the relationship between landscape and the location of west Norwegian, and Scandinavian rock art as a whole, have proposed the significance of a number of key factors:

1. **Proximity to fertile and or cultivated land** (Almgren 1927; Mandt 1972; 1978; Kaul 2005).
2. **Features of the rock surface and distinctive natural geology** (Helskog 1999; Nordenborg Myhre 2004; Goldhahn 2007; Bengtsson and Ling 2007).
3. **The sight** (Mandt 1972; Bakka 1987; Coles 2005; Ling 2008), and sound of water (Reznikoff 1995; Goldhahn 2002; Lahelma 2005).

There are differences of opinion within west Norwegian studies as to whether one of the above listed factors has been more influential than the others. The importance of agricultural land, relative to the situation of panels (Mandt 1972; 1978), represents the traditional approach applied to the location of Southern Tradition rock art. At the time of writing, the works of Almgren (1927) and Glob (1969), that advocated the importance of proximity to cultivated land and fertility, respectively, were very influential. The evenly spaced distribution of rock art has been seen as an indicator of social groupings and/or territories (Sognnes 1987a; 1987b). Kaul (2005) suggests that placement on the edges of agricultural land on the northern part of the island of Bornholm, may be similar to that evidenced in Mandt’s data.

A major shift in our interpretation has resulted from renewed focus and revised understanding of shore displacement, which is ‘a principle associated with post-glacial uplift of the land in relation to the making of carvings at the shore, where the art cannot be older than the associated shoreline’ (Bradley, Chippindale, and Helskog 1995, 17). The principle is not new and can be traced back to the beginning of the research history of Scandinavian rock art (Ziegler 1901; Hallström 1907, 187; Gjessing 1916; 1945, 264). Use of more precise modelling of shorelines in GIS has proposed a more aquatic loca-
tion for a very large number of panels in Tanum, western Sweden, and Uppland, eastern Sweden. In these works, the importance, within a number of regions, of panels to the sea, sheltered inlets, fjords (Ling 2008; 2013), and lakes (Bradley 2009), have been convincingly demonstrated.

Scholars have advanced the concept further by suggesting that views or proximity to water may not have been the only important aspects. The sound of running water may have also been significant within Northern Tradition rock art (Tilley 1991; Goldhahn 2002). Water symbolism may have continued within Southern Tradition art. Tilley (1991) picked up on the philosophy of Eliade (1958), who asserted that water may have been a long lasting religious symbol across cultures. This had already been observed by Mandt (1972, 138, 150), who suggested Eliade’s contentions could be applied to partially explain the location of west Norwegian rock art, which is, with the exception of the large sites of Vingen and Ausevik, predominantly from the Southern Tradition.

As plurality within archaeological theory has become more and more accepted, the number and scope of interpretations concerning relationships with the natural environment have likewise increased significantly. Influenced by the works of Lewis-Williams and Dowson (1990), who asserted that cracks in the surface could be entry points to the underworld or an unseen world beneath the rock surface, the importance of fissures and cracks began to be taken into consideration (Nordenborg Myhre 2004).

The composition and incorporation of certain inclusions may also have been significant. In the case of Bronze Age rock art, the presence of quartz and soapstone in a surface may have been considered an important factor in site selection. Goldhahn (2007) highlights the practical use and cosmological importance of quartz and soapstone within bronze casting and smithing. Goldhahn (2007, 161–63) also highlights the frequency of the occurrence of quartz within rocks selected for carving and the use of quartz veins to form complete compositions of ship carvings. Given the associations with ships, it is not inconceivable that quartz, as well as all its other symbolic associations, may also have been linked to water symbolism.

Case Studies and Field Technique

To investigate these aspects, fieldwork was conducted at forty-seven sites contained within four case study areas, selected within the counties of Rogaland, Vestland, and Møre og Romsdal (Fig. 11.1). Within the selected areas, a full sample was sought, and selection of the localities was made on this basis. In addition, a small selection of other sites, drawn from across all four counties, were included to provide contextualization.

Whilst every effort was made to ensure a total sample, this was not possible in all cases, due to panels having been removed from their original context, destroyed, their original location being unknown, or simply because it was not possible to locate them during the fieldwork. Sites that were visited are shown in Fig. 11.1. Nevertheless, the majority of sites in the Stordal valley (68%), Etne municipality, the greater Hardangerfjord (78%), the greater Bjørnafjord (85%), and the inner part of the Nordfjord were surveyed (80%).

Figure 11.1. Location of rock art sites included in the study within Rogaland, Vestland and the southern part of Møre og Romsdal counties, West Norway (map adapted from Mandt 1991, 88, with additions by J. Dodd). The sites have been collected into a number of smaller sub groups of varying geographical extents, which are denoted by the various code group names assigned to them.
To assess the nature and significance of the relationship between rock art location and water, tables were compiled from the data sheets compiled for a previous study (Dodd 2011), containing free text descriptions of the relationship, if any, between the site and/or figures, and water, as well as other factors, including proximity to cultivated land in the present day, and features of the rock surface. Counts of words of interest, including combinations, were then extracted, using standard commands from the Unix computing language executed within Microsoft Excel, for further exploratory analysis.

Results

Water

Water was visible from all surveyed sites. The balance between salt and freshwater bodies visible from the panels is explored in Fig. 11.2. More sites overlook both salt and fresh water than fresh or saltwater only, although the exact balance is different within each of the case study areas, arguably due to differences in local topography. Fig. 11.3 explores the connections and relationships between salt and freshwater in greater detail. Views overlooking fjords, followed by streams and rivers are the most common categories visible from panels. Although the distribution has a widespread and low peak, the significance of this combination, over a multitude of other possibilities, contends that the landscape location of rock art sites in the study areas may be structured with reference to a combination of running water flowing into a large body of water located below the site.

A correlation is evidenced in the study between the location of rock art and water (or waterlogged contexts). If there were a bias toward the sea, one would expect saltwater to predominate. However, this is not the case. If inland bodies of water were more important, then, conversely, freshwater would be more significant.

One of the strongest trends identified from amongst the many aspects of the relationship between the location of rock art and water is the proximity to streams and the sound of running water. Water was audible from twenty-eight sites. Streams can be seen from twenty-two sites (46%). At 60% of panels, water was audible at time of site visit. The mean distance, measured in The Norwegian Directorate for Cultural Heritage’s online GIS and database, Askeladden, between the panels and the sources of the sound of running water, is 0.530 km (+/-0.001 km). One of the most striking examples is found at the Flote 1 site, overlooking the Stordalsvatnet, in Etne municipality (Fig. 11.4). This richly decorated rock is one of several in the area (Fig. 11.5). In this case, all panels are in the sight and/or sound of running water.

Quartz

Quartz, in the form of large bands, small veins, or clasts of varying sizes was present at thirty-two (70%) of the sites. At the panels where quartz was found, there were a number of relationships. There appears to be a preference for surfaces where veins of quartz run around the sides of the carved surface twelve sites (28%), thereby framing groups of figures. This is also a trend evident amongst the number of instances where crevices frame groups of figures.

Evaluating the Significance of Water Relative to Rock Art Location

The study of the setting, placement, and meaning of panels cannot be concluded based on the mere presence or absence of water, as all sites examined in this article are located in view of water.

Distinctions between salt and fresh water do not appear to have been the primary consideration when situating sites with reference to large bodies of water. Locations overlooking large expanses of fresh and saltwater, as well as those within sight and sound of streams and rivers, appear to constitute the dominant landscape situations of panels within the case study areas. The wide distribution and chronology of sites conforming to this trend, ranging from Trettestykkje in Rogaland, to Bogge 3,
in Møre og Romsdal, attest the wider importance of locations where streams or rivers flow into a large body of water, either in the form of a fjord or lake. Conceivably, large expanses of both fresh and saltwater can be considered equally valid as liminal locations in the landscape and as potential entry points to the underworld. Thus, the conclusions originally proposed by Wrigglesworth (2000; 2007) concerning rock art and burial cairns overlooking saltwater at the localities of Samnøy and Unneset, both located in Vestland county, can also be applied with regard to the shorelines of lakes.

Therefore, it can be tentatively suggested that the sound of running water may have been a significant factor in site selection. Whilst streams and rivers are only visible at a little over one third of rock art sites, the number of cases where the sound of running water was audible at the time of site visit, is nearly double. Therefore, it is logical to conclude that relationships between water and the location of rock art in the western Norwegian landscape is
not solely structured around visual connections. Whilst a number of different sources of water are visible from the panels, relationships between the sea, lakes, rivers, and fast flowing streams extend beyond the site viewed.

The possible meanings of water relative to site location may be associated with a tripartite cosmology, following ethnographic parallels contended within past research between the Sámi, the indigenous people of Northern Europe, and the prehistoric population of Scandinavia (Helskog 1985; 1999; 2004). A key element of Sámi cosmology is a division of the world into three zones, the upper, middle, and lower world, symbolized by the sky, the earth, and the underworld. The Sámi consider water an entrance to the underworld, and shorelines an area of the landscape imbued with symbolism associated with rebirth and regeneration (Helskog 1999, 76). Therefore, in the beliefs of the Sámi, shorelines signify the meeting place of three worlds, not only the physical (earth, sky, and water) but also the metaphysical, an opening and or junction between the everyday world, which, as of itself, is viewed as a plane of transition between the upper and lower worlds (Bayliss-Smith and Mulk 1999; Mulk and Bayliss-Smith 2006; Utsi 2009, 22–27).

Within the Bronze Age, it may be possible to link the landscape location of sites in West Norway to the elements of religion and cosmology proposed by Kaul (1998; 2004). Whilst there are potential pitfalls of overly relying on Sámi historical ethnography to inform our interpretation, if the basic significance of shorelines is used as a point of departure, an interesting new interpretation can be presented.

If the ability of water to link all three levels of the cosmos is transposed to the landscape location of the rock art, in proximity to streams and large bodies of water, the following theory can be contended. The stream and or body of water above the site, could represent and/or be a link to the upper world, the sky. The expanse of water below the panel could both link to and represent the underworld. The stream and the rock art panel are situated in the plane of transition, the everyday world of people. The stream flowing past the site into the lake or fjord below potentially connects all three levels of the tripartite cosmos, and also provides a means of transit for deities or ancestors or ritual specialists to move within the cosmos.

The possibility that the location of panels might reflect a tripartite cosmology can draw supporting evidence from other areas of research. Bradley (2006, 386) suggests that the act of incising motifs into the surface of the rock may have opened up portals connecting the sky, earth, and underworld. Wriggelsworth (2000; 2007) observes that ship carvings at Unneset, in Vestland county, sail both toward and away from water. Perhaps the connecting streams conceivably functioned as two-way highways, permitting travel in one direction during the day and in the reverse direction during the night, hence reflecting the theory of Bronze Age cosmology proposed by Kaul (2004).

Quartz and Water Symbolism

The presence of quartz in selected surfaces may suggest that this could have been significant as of itself, in combination with the other factors of the sight and sound of running water. At Mostraumen,
small quartz veins create a visual effect whereby the ships appear to be sailing through a scene of low, white topped waves. Given the frequency of the links between sites and water, it could also tentatively be proposed that the colour symbolism of quartz may have also been associated with churning water, such as found in fast flowing streams and rivers, as well as during windier conditions at sea. However, there are few occurrences of direct associations (for example, incorporated within a figure), only present at ten sites (21%) within the study.

**Cultivated Land**

Notwithstanding climatic differences between the present day and prehistory and the effect of shore displacement (Romundset 2005; Lohne 2006; Vasskog 2006) at sites such as Berge, in Strandebarm municipality, the boundaries of fertile land in the study areas are mostly limited by the topography. Consequently, that the amount of land available for cultivation is, at the coarsest level, a reasonable reflection of the situation during prehistory.

If we accept this assumption, it would seem that Kaul’s (2005) hypothesis concerning Mandt’s (1972) data is upheld by the findings of this study. Of the panels included in the study, twenty-nine (61%) are located at the edges of areas currently under cultivation. One could also say that there also appears to be a strong relationship between cultivated, or perhaps habitable areas, with forty-four (93%) sites situated in the middle or the edges of fertile or cultivated land. The two remaining sites, Rykkje II and Vangdal II, belong to the earlier Northern Tradition (created by fisher-gatherer societies) and are, unsurprising, found in different locations to Southern Tradition sites: on steeply sloping rock surfaces at small promontories in the fjord.

Arguably one of the particular local features of West Norwegian rock art are the large numbers of cup mark sites associated with summer mountain pastures (Mandt 1972; 1991), which are underrepresented in the study (only the sites at Lote and Nystøl fall into this category). Seasonal transhumance and the associated practices of animal husbandry and grazing were probably a very important part of the economic sphere over a long period (Prescott and Melheim 2017). The chronology of the sites in the upland pastures is open to discussion, with suggestions ranging from the Neolithic (Vevatne 1996) to the climax Late Bronze and early Early Iron Age (Lødøen 2015). The dating by Lødøen is supported by paleoenvironmental evidence, whereas Vevatne relies upon stylistic analyses. The author is more convinced by the arguments of Lødøen, and shares the opinion that many of the sites in the upland pastures probably date to the end of the Bronze and Early Iron Age. However, finds of figurative Southern Tradition art alongside cup marked rocks at higher elevations are not unknown, for example at Reiseter-Dravladalsvatnet and Hauso, both located in Ullensvang municipality, outside the study area.

Had more cup-mark sites near summer mountain pastures been included in the study, the percentage of sites associated with cultivated land would be much higher. It is uncertain whether these are situated in the landscape according to the same, or, a different set of criteria to those associated with water.

**Concluding Remarks**

This chapter has assessed the impact of geographical features of the landscape, characterized by their water content, on the location of a subset of the Southern Tradition rock art found in West Norway. A strong preference is demonstrated for locations in proximity to the sound and sight of running water, as well as large bodies of salt and freshwater. This can be linked to elements of Sámi cosmology, namely the tripartite division of the cosmos. The similar tripartite division of the world within the cosmology and religion of the Bronze Age, as proposed by Kaul (2004), may have interacted and assimilated within pre-existing conceptions. The selection of one specific surface over another, within a given area, may have been structured according to the presence of quartz in the panel, whose colour symbolism and geomorphology resembling churning water can also be associated with water symbolism.

When the findings are compared to other factors, they remind us that the reasons for the location of rock art are probably very complex and the result of the interaction of many different aspects. Therefore, it is possible for Southern Tradition rock art in West Norway to demonstrate strong links with water on the one hand, but also a connection with the cultivated areas, in so far as the panels are still generally found at the edges of inhabited areas, with the exception of cupmark sites located upland areas, which appear to have a different distribution.

The particular preference for locations in sight and sound of running water is fairly significant for the small group of sites in this area of West Norway. However, this conclusion does not hold true for all the areas of Northern Europe where Southern Tradition rock art is found. Further work is needed to understand whether the complex relationships with water identified in West Norway are part of a regional phenomenon, or something more widespread.
Acknowledgements

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Works Cited


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Ziegler, Reinhold. 1901. ‘Arkæologiske Undersøgelser i 1900’, Det Kongelige Norske Videnskabers Selskabs Skrifter, 7: 3-5
12. Patterns or Contrast?

A GIS-Based Study of the Landscape Context and Localization of the Southern Rock Art Tradition in Stjørdal, Mid-Norway

Introduction

About 25% of the rock art panels in Norway can be found in the region of mid-Norway, a part of Norway centering around the Trondheims-fjord area where major river valleys join up with the Trondheims fjord. Research upon the rock art in this region has roots back to the nineteenth century, and has traditionally been focussed upon two different traditions of rock art. The Northern Tradition (NT) of rock art is the oldest, mainly dating to the Mesolithic and Neolithic, consisting mainly of depictions of wild animals and game dominated by cervids. The Southern Tradition (ST) has traditionally been linked to the Bronze Age/Early Iron Age and is dominated by boat figures, geometric figures, and domesticated animals. The different traditions are interpreted as belonging to different periods and different ways of life, where the NT of rock art was interpreted as belonging to a hunter-gatherer society while the ST rock art was interpreted as related to agricultural society (Gjessing 1936, 158–59). Sognnes (2008, 230) estimates that the material is split 20–80% between the two traditions, with the Southern Tradition being the largest group. However, the geographic distinctions between the two traditions are not so simple. The region of Stjørdal, one of the major river valleys flowing into the Trondheims fjord, appears to represent a border area where both rock art traditions are present. There are examples where the two traditions are present at the same sites, suggesting a coexistence over potentially several centuries — alternatively there may be a very long spatial continuity in the use of these specific sites for ritual purposes. The site of Bardal in Steinkjer is one of the best-known examples where both traditions are present on the same panels (Sognnes 2012, 240–41; Stebergløkken 2017, 44–46).

The material certainly shows examples of overlap in the use of the same panels, but the overall trend tends towards a material duality both in the sense of the different types of motifs present for the two different traditions, and their localization in the landscape. What remains undetermined is whether this material duality should be interpreted as chronological differences or as two opposing visual cultures (Sognnes 1998, Sognnes 2012, 240–41; Stebergløkken 2016, 257–58). Even so, chronological analysis of the location of the rock art panels is not the focus for this particular study.

The rock art material is complex and there will always be certain aspects of the material that do not follow an assumed pattern. Quantitative and descriptive models of preferable conditions, assumed behaviour, or typology make it possible to assess how well archaeological sites fit these models and to make interpretations based upon the observations and consecutive analysis of how well the sites fit the generalized models made. Some sites fit well, while others deviate from an observed pattern. These deviations can be important clues for understanding the overall trends, helping us to adjust and rethink how we interpret trends in rock art motifs and landscape context.

Within this paper, we will focus on the Southern Tradition, using Stjørdal as a case study. We will present panels and motifs from this area along with general trends, before looking more closely at the localization of the known rock art in this landscape. Rock art sites in Stjørdal appear to be located differently in the landscape, contrasting ST sites in places
like Bohuslän, which have a much clearer relation to the seascape and shoreline (Ling 2008; 2013). Previous research has placed the material from Stjørdal in an agricultural context, relating the rock art to agricultural settlements (Sognnes 2001; 2003; 2012).

This paper does not aim to suggest a new chronology of the rock art panels, but rather study the location of the panels in relation to the various landscape elements they coexist with. We will implement GIS models to increase our understanding of the rock art sites, in particular how the rock art sites relate to the cultural-historical context and the landscape. In this way, we are able to identify tendencies in the material and analyse the rock art in its cultural-historical context. We consider the important questions of what characterizes the rock art in Stjørdal in terms of types of motifs and their location, and how does this art work relate to the landscape?

Stjørdal — A Case Study

Stjørdal municipality has one of the highest concentrations of rock art in Norway, and the highest concentration of rock art belonging to the Southern Tradition in mid-Norway. A total of thirty-four known panel locations are still found in situ in the municipality, all of which are included in our dataset.

The rock art of Stjørdal has been known since the 1860s. Sognnes (1983; 1987; 1990; 1999; 2001; 2012) has undertaken significant work with this material in terms of organizing it, making typologies, working through chronological challenges, conducting thorough analyses of the rock art and landscapes, undertaking motif analyses, as well as statistics and general interpretations. In his extensive research on the preferable location of rock art panels, Sognnes (2003) has connected the rock art site locations with settlements. This is mainly based on the distribution of panels, which seem to create a pattern where the panels are distributed systematically with a relatively even distance between the panels, and a preference of locating the panels close to arable land (Sognnes 2003, 94–95). The Stjørdal valley is dominated by the Stjørdal river and its associated river plain; the sandy valley floor constitutes easily cultivated and well-drained soils, furthermore acting as a corridor connecting the fjord to the more mountainous areas further east. The valley sides are forested, with several flat terraces present (Sveian 1995; Dahl, Sveinan and Thoresen 1997). Sognnes (2001) has estimated the Bronze Age sea level in Stjørdal based on the present land uplift of 3.7 ± 0.8 mm a year with 10% added per millennium, resulting in a shoreline lying 19.7 m above present sea-level at the beginning of the Bronze Age, and 13.4 m at the end.
of Bronze Age (Sognnes 2001, 37). This information is vital when creating landscape regression models to investigate the location of the rock art panels in relation to seascape and shoreline.

**Society, Settlement, and Agriculture**

Much of the discussion regarding how rock art can be understood as part of a social and ritual landscape has been related to what particular types of societies that created these rock art panels and their motifs. During the Late Neolithic (LN) and the Early Bronze Age (EBA), the general understanding is of a society changing from a nomadic hunter-gatherer tradition towards a semi-nomadic and/or sedentary pastoral and farming society (Sørensen 2014). As rock art is considered to have been an integrated part of the social and ritual life of inhabitants in this area (Sognnes 2001, 78), it therefore also becomes necessary to have an understanding of the type of sedentary tradition that the people carving such rock art were a part of. Marstrander (1954, 76–77) suggests an understanding of Bronze Age society as a loose societal organization of a semi-nomadic character, maybe with a hierarchical upper stratum controlling trade and commerce. Hagen (1983, 226–50) suggests a more semi-nomadic settlement pattern in the LN, which during the EBA transitions to a more sedentary way of life involving more permanent house constructions and investments in livestock and arable fields. Hagen also proposed two different models for understanding the settlement patterns; the first is slash-and-burn preparation of fields, grazing, and hunting, with modest houses and no fixed fields. This meant that farms had to be moved with new fields being opened up by a slash-and-burn technique — an expansive way of life requiring large available spaces. The second model is a more permanent settlement reused over several generations, where new areas nearby are prepared by a slash-and-burn technique for grazing and/or farming in a moving pattern (Hagen 1983, 226–50). The earliest known evidence of farming and the earliest identified presence of domesticated animals is traced back to the transition between the LN and EBA. Evidence of settlement activity from this period includes macrofossil, pollen, and faunal evidence and archaeological finds of houses and objects that are typically dated to this transition period, such as flint sickles and boat-shaped stone axe heads (Petersen 1912; Solem 2002; Asprem 2012a; 2012b; Sørensen 2014). The data available from mid-Norway as summarized above is scarce, but it still indicates a new presence of pastoral and farming activities from the transition between the LN and EBA.

In mid-Norway, direct evidence of settlements in the form of houses from the LN and the EBA is rare, but at Husbyåsen in Stjørdalen four small houses were found in the immediate vicinity of several Southern Tradition rock art panels. Two of these houses were dated to the EBA; House I was dated to 1490–1265 cal. BCE and House II was older than 1415–1325 cal. BCE. A cooking pit lying immediately adjacent to one of the rock art panels was dated to 1915–1785 cal. BCE, and another cooking pit found at the site was dated to 2395–2205 cal. BCE (Rullestad 2010). Husbyåsen also provides an example of a very close relationship between rock art panels and a settlement. Sognnes (2001, 80–81) suggests that it was likely that each rock art site belonged to, and was used by, one social group of sedentary farmers with their own panels of rock art. He also suggests that they might have one area or territory, with seasonal camps or farmed areas around the main settlement, similar to the second model proposed by Hagen (1983, 249). Generally, house constructions can be interpreted as a more sedentary practice, indicating some form of investment that is more permanent and an increased connection to the local area taking place around the transition between the LN and EBA. At Fosslia, about 1900 m away from the site of Husbyåsen, a layer of agricultural deposits dated to the EBA (1525–1450 cal. BCE) was discovered (Dyrendal 2011). Such spatial co-occurrences between settlements, agriculture, and rock art are very rare in the archaeological record from this region, thus providing additional support for analysing the settlement pattern and agricultural conditions surrounding these ST rock art sites.

**Rock Art in Stjørdal — Sites, Motifs, and Dating**

There are different ways to present the material from Stjørdal. There have been many attempts to try to see patterns both in the location of rock art in the landscape and in its chronology. Dating rock art is always challenging, but in some cases, there are possible methodical approaches. Typological studies of the motifs in connection with shoreline dating have been a preferred approach but seeing the typological elements in relation to archaeological artefacts, such as razor knives for example, is another method (Kaul 1998; Ling 2008). Even though there are suggested chronologies of the rock art in the Bohuslän area...
Table 12.1. Boat types and location. Concentrations are highlighted with grey and bold text indicates which sites are the most represented. Røkke and Ydstines are marked with light grey because they are the only sites where all types are represented. Boat images and statistics from Sognnes (2001, 64–67).

<table>
<thead>
<tr>
<th>Boat types</th>
<th>E</th>
<th>G</th>
<th>H</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase</td>
<td>1 (LN/EBA)</td>
<td>2 (EBA/LBA)</td>
<td>3 (Pre-Roman Iron Age)</td>
<td>4 (Roman Iron Age)</td>
</tr>
<tr>
<td>Skatval parish</td>
<td>83.3%</td>
<td>16.7%</td>
<td>56.6%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Røkke</td>
<td>Røkke</td>
<td>Røkke</td>
<td>Røkke</td>
<td>Røkke</td>
</tr>
<tr>
<td>Auran</td>
<td>Auran</td>
<td>Auran</td>
<td>Auran</td>
<td>Auran</td>
</tr>
<tr>
<td>Arnstad</td>
<td>Bremset</td>
<td>Bremset</td>
<td>Bremset</td>
<td>Bremset</td>
</tr>
<tr>
<td>Hegra parish</td>
<td>9.3%</td>
<td>54.4%</td>
<td>34.3%</td>
<td>53.1%</td>
</tr>
<tr>
<td>Leirfall</td>
<td>Hegre</td>
<td>Bjørngård</td>
<td>Hegre</td>
<td>Bjørngård</td>
</tr>
<tr>
<td>Fordal</td>
<td>Leirfall</td>
<td>Leirfall</td>
<td>Leirfall</td>
<td>Leirfall</td>
</tr>
<tr>
<td>Bjørngård</td>
<td>Hegre</td>
<td>Bjørngård</td>
<td>Hegre</td>
<td>Bjørngård</td>
</tr>
<tr>
<td>Kil</td>
<td>Kil</td>
<td>Kil</td>
<td>Kil</td>
<td>Kil</td>
</tr>
<tr>
<td>Lånke parish</td>
<td>0.9%</td>
<td>4%</td>
<td>21.9%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Reppe</td>
<td>Gjeving</td>
<td>Ståberg</td>
<td>Ståberg</td>
<td>Ståberg</td>
</tr>
<tr>
<td>Dybvad</td>
<td>Reppe</td>
<td>Berg</td>
<td>Berg</td>
<td>Berg</td>
</tr>
<tr>
<td>Værnes parish</td>
<td>7.5%</td>
<td>28.1%</td>
<td>5.1%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Ydstines</td>
<td>Ydstines</td>
<td>Ydstines</td>
<td>Ydstines</td>
<td>Ydstines</td>
</tr>
<tr>
<td>Vikan</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Gråbekk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Ling 2008), these chronologies cannot necessarily be transferred directly to the Stjørdal material. It could be used as an indication of age, but without a wider application, as we are dealing with a different region and because the rock art addresses the landscape in a different way, which is part of this study. We will be discussing clusters of panels located in two separate areas later in the text, namely the Hegra and Skatval parishes (see Fig. 12.1). The parish of Hegra is located east up the river valley from the outlet of the Stjørdalen river. Skatval parish, on the other hand, is in the western part of the municipality, and is not part of this river valley.

Motifs

Sognnes (1987, 74–87; 2001, 55) suggests a chronological sequence and indicates a general division by older to newer motif types. By using boat types that show attributes of younger elements such as oars and masts, we do have some indication of the relative chronology. He bases his chronology on different boat types and suggests four different phases (Table 12.1). The oldest boat type is called E-type, which he argues belongs to the oldest part of the Bronze Age, possibly even the Neolithic (Phase 1). Next is the G-type, which comes in many different variations. The simplest form is related to the EBA
ters at Røkke, Ydstines, Hegre, and Leirfall, which are located in Hegra parish where the sites are found. Horse figures are also common, and 78.8% of these contain footprints. There are very few sites with boat images, and 78.8% of these contain footprints. The sites with the most footprints are also rarer. About 18% of all ST rock art in Stjørdal are dominated by motifs in this region, while handprints motifs are dominant in Stjørdal. Footprints are one of the most common motifs in Stjørdal, and Sognnes (2001) also describes other boat types, but it is difficult to create a more detailed chronological study based on the rock art boat motifs at Stjørdal.

Looking at the geographical distribution, type E (Phase 1) is found at five different sites: Røkke, Auran, Ydstines, Leirfall, and Fordal, with a concentration at Røkke. Type E can be found from approximately 40 to 115 m a.s.l., Type G shows a clear concentration in Hegre parish which accounts for 54.4% of all motifs of this type, but also with a concentration at Røkke and Ydstines. Phase 2 consists of three major clusters at Røkke, Ydstines, Hegre, and Leirfall, which Sognnes (2001, 64–67) interprets as boundary markers, with the Hegra Parish (where the sites Hegre and Leirfall both are placed) gaining importance during Phase 2. In Phase 3 you can find H-types at twelve sites, with a concentration at the Skatval peninsula (56.6%), similar to Phase 1. In comparison to Phase 1, Auran is now the dominant site rather than Røkke. At Hegra parish there has also been a shift of the centre from Hegre and Leirfall, to Bjørngård which is situated between the two sites. For the last phase, type K, we can see a concentration at Hegra parish with 53.1% with a split between Hegre and Bjørngård. Focusing on shorelines, this does not give a clear distribution pattern for type H and K (Sognnes 2001, 64–67). In conclusion, none of these sites can be shoreline dated, and as a consequence, this makes it difficult to create a more detailed chronological study based on the rock art site distribution at Stjørdal. Sognnes (2001) also describes other boat types, but these cannot be placed for certain within this relative chronology and are therefore excluded. Newly discovered sites like Skatval IV and Husbyåsen are not taken into account.

Most likely, there are only four rock art sites out of thirty-four that could be interpreted as shore-bound (Table 12.3): Viken I–II (14–16 m a.s.l., Phase 2b boat motifs), Gråbekk I (15 m a.s.l., Phase 2b motifs), and Reppe I (16 m a.s.l., Phase 3 motifs). Because of their location, these sites cannot be older than the Late Bronze Age/ pre-Roman Iron Age, which largely corresponds to the relative dating suggested by Sognnes (1987, 86–87; 2001, 63–67).

Apart from boat figures, we can also identify other motifs in Stjørdal. Footprints are one of the most dominant motifs in this region, while handprints are rarer. About 18% of all ST rock art in Stjørdal are footprints. The sites with the most boat images also contain the most footprints. There are very few sites with anthropomorphic figures, and 78.8% of these are found in the Hegra parish. Horse figures are also related to the sites located in Hegra parish where almost 80% of all horse figures in Stjørdalen municipality are found, and of which 56.9% are found at the Fordal site alone. Only 7.5% of all horse figures can be found at the sites located on the Skatval peninsula. Geometric figures like rings, spirals, and rectangles are also common and the majority are located on the Skatval peninsula (34.4%) and Hegra parish (51.9%). Cup marks are more frequent than any representational motif found in Stjørdal — Skatval parish seems to have a concentration of this motif with 61.4% of all the cup mark images in Stjørdal, which are often found together with other motifs (Sognnes 2001, 67–72). It is extremely difficult to date these different motifs, particularly the footprints, geometric figures, and the cup marks. The oldest representations of horse images have been interpreted as dating to the early part of the Bronze Age, while horses with riders have been connected with the Bronze Age Period VI and the pre-Roman Iron Age (Malmer 1981, 93; Sognnes 1987, 85; 2001, 59).

The presentation of the different phases and types above does not give a precise chronology, but it does give us an indication of a possible relative chronology. It also indicates different shifts of centres during the different phases, which could tell us something about different ritual centres throughout the Bronze Age and Iron Age. Hegre and Skatval parish stand out in this context. We find all phases represented at Ydstines (Værnes parish) and Røkke (Skatval parish). However, at Leirfall (Hegra parish) and Auran (Skatval parish) the last phase is not represented. Another important aspect is the reuse of the panels, which indicates that some places had been preferred more than others for some reason. The rock art sites in Stjørdal have previously been connected to settlements, however, the only settlement excavated in the immediate vicinity of a rock art site is at Husbyåsen (Rullestad 2010). Sognnes (2003, 93–97) has calculated the spatial distribution of the rock art sites in Stjørdal, and it seems to form a pattern showing regularity in its distribution. Questions that immediately come to mind are why some of the sites seem to have been reused, and why we see a concentration of rock art at some of the sites not at others.

Method — GIS Modelling and Spatial Analysis

The location of rock art in the landscape, as well as how this location relates to aspects such as types, sizes and activities of social units, movement through the landscape, and natural conditions has been a much-debated issue (Sognnes 2001, 29–39, 73–98).
Localization factors are therefore to some extent a question of scale. We must consider both the overall landscape of Stjørdal with all its topographical variation, as well as the local landscape with the site units, how the different panels relate to each other, and how they relate to the surrounding local landscape. Localization factors for rock art sites could be shorelines, settlement areas, territory, roads and paths, river plains, orientation, and soil condition as suggested below.

Shorelines
Water sources are one of the main localization factors, and proximity to water can also be an important factor in understanding the meaning of the rock art. Northern Tradition rock art has also been interpreted in an audio-visual context, where waterfalls and rapids can be seen as important elements for understanding the rock art and its location (Goldhahn 2002). Shorelines can also be interpreted as liminal zones where the different elements meet. These could be important places for contacting other ‘worlds’, or places where a control of different elements can be gained (Westerdahl 2005; Gjerde 2010; Steberglokkken 2016). Southern Tradition rock art in particular is often connected to a maritime context — from Bohuslän and further north, along the coast of Norway to the Arctic Circle, most of the ST rock art sites are located close to the shoreline. The rock art’s location is seen in relation to movement through the landscape, the launching of ships, and rituals connected to the shoreline (Ling 2008, 245–55; Sognnes 2012, 240). Our analysis will include this aspect, in order to investigate how the rock art relates to the shoreline and the Stjørdal River. We also chose to investigate the mean height above sea level for each site, as well as distances to the closest major water bodies (i.e. the fjord or the Stjørdal River), considering the height of sea level as it was at 1700 BCE (22 m a.s.l.), 1100 BCE (16 m a.s.l.), and 500 BCE (12 m a.s.l.) (Sognnes 2001, 35–38).

Settlement Areas
The site of Husbyåsen indicates a close connection between settlements and rock art. The early farming evidence from Fossli, close to Husbyåsen, also connects the rock art to agricultural practices (Rullestad 2010; Dyrendal 2011). As suggested above, the connection between rock art panels and settled areas is of interest when studying the location of the known panels. Sognnes (2001, 78–82) argues, based on an analysis of the location and distribution of rock art panels in Stjørdal, that each site might be close to central dwellings.

Territory
Sognnes (2001, 78) analysed the distribution of sites at Hegra and Skatval and found that the average distance between two neighbouring groups of rock art sites was around 2100–2250 m apart, indicating an approximate radius of 1000 m as an indicator for the circumference for each territory. This is similar to results from Bohuslän (Bertilsson 1989), and the island of Ven in Sweden (Welinder 1977, 106). Kjellén and Hyenstam (1977, 7–30), on the other hand, found indications of possible territories varying in size, but with a radius between 300 and 500 m. Based on their observations, we will use a radius of 500 m and 1000 m for our calculations.

Roads and Paths
Roads and paths have also been suggested as an important element to consider for the location of rock art, as rock art sites might have been situated along routes of communication (Petersen 1926). As a possible trend this might be harder to recognize as prehistoric movement routes can be difficult to directly locate and identify in the landscape, although you would often pass the rock art if you were travelling on a road between settlements. This aspect will not be used or discussed further in this analysis but is included here for potential future scholarship.

River Plains
Most of the sites in Stjørdal lie in the transition between the valley slopes and the river plains. Sognnes (2001, 2) interprets this as an indication that the river plains were an important localizing factor. This might be related to the agricultural conditions and landscape affordances for settlement sites.

Orientation
Otherwise, analyses of the rock art faces indicates that most of the engraved panels faced south and/or south-east, and were on rock faces sloping between 10° and 30° (Sognnes 2001, 78, 105, and fig. 45).

Soil Condition
As scholars such as Sognnes (2001, 78–82) argue that each rock art panel is close to the main settlement of a social unit, it is important to consider how suitable such areas were for settlements and farming. Soils that were easily cleared and maintained and thus were suitable for farming by using scratch ploughs could be of importance for the location of the rock art sites. We, therefore, choose to inves-
tigate the location of rock art panels compared to areas assumed to be ideal for pre-industrial agriculture as well as areas ideal for settlements as previously modelled by Stamnes (2008; 2010).

**Other Factors**

There are other aspects which are difficult to model and include in such an analysis, such as sites related to rituals and potential seasonal or local traditions. One example of this is Hegra, which stands out in our GIS models and seem to function as a rock art centre. Here we also find one of the largest hoards of bronze axes (celts) ever discovered in Norway, found in 2017 (Henriksen 2018), which indicates that this has been an important area of ritual practice in the Bronze Age.

**GIS Modelling**

The GIS models presented below are made on the basis of known locations of agricultural traces dated to the Bronze Age and the pre-Roman Iron Age, as well as assumptions of past agricultural practices from a pre-industrialized agriculture using the scratch plough (also known as an ‘ard’) and of past human behaviour and preferences for settlement areas (Stamnes 2008, 2010). The maps used for presenting good agricultural conditions are based upon the requirements for growing barley and sunlight conditions throughout the growing season. Barley is the crop type with the least requirements for growing degree days (i.e. a quantification of the total amount of sunlight and heat throughout the growing season) and is also the crop type which is most abundantly found in the archaeological material in the region (Stamnes 2008, 41–42). Certain soil conditions are more suited for growing barley, such as silty soils and light clay, while heavy clays might be too dense for the root system as well as for soil preparation by scratch ploughing. The data provided by the available geological data sets have a poor resolution, but there is room for improvement of this model if more detailed soil datasets are available.

The maps used for presenting good areas for settlements combine four datasets, where the numbers in parentheses indicate their weighted contribution to the final model; sunlight (10%), ecological variation (15%), proximity to good agricultural areas (30%), and areas with good natural drainage conditions (45%). Digital terrain models are the basis for these datasets, as well as geological maps and proximity to good areas for agriculture derived from the modelling of good agricultural conditions as described above. A subsoil which has good natural drainage is considered positive for the choice of settlement areas. The values range from 1–9, where 9 is considered the most optimal (Stamnes 2008, 2010).

Height values are derived from a digital elevation model based on lidar measurements, with a raster resolution of 1 m (i.e. each 1 x 1 m location in the landscape as one height value in metres without decimals). By looking at the known settlement sites and traces of cultivation, while also taking into account sediments, drainage, and closeness of water, we can say something more about the location of the rock art in the landscape. In this analysis, we will include a total of thirty-four panel locations in our dataset (Table 12.2). These panels are still in situ, but the selection is not exhaustive — it is not all prehistoric rock art from Stjørdal. Some of the panels have not been rediscovered, and some have been moved to the NTNU University Museum at the Norwegian University of Science and Technology (NTNU) or other local museums, and others still are presumably yet to be found. Several of the known rock art locations consist of more than one known panel. We have chosen to consider areas with several panels as one site if the distance between the centre point of panels is less than 300 metres. If the distance is larger, the panels are considered two separate sites in this analysis. When generating an overview of the properties of the various sites, the centre point is where we have calculated the properties for good agricultural conditions and good settlement conditions. For assessing the closest distance to major water bodies, we have used the distance to the nearest rock art panel within the site. We calculated the mean values of each model (agriculture and settlement) for two differently sized areas, with a radius of 500 m and 1000 m respectively. Table 12.2 includes these mean values, as well as the height above the present-day sealevel, and the distance to the main rivers or shoreline (major water bodies).

The models and the digital terrain models have been based on available digital datasets from modern times, and do not take into account the historical and prehistorical landscape changes that might have taken place since the Neolithic. The reliance only on visual studies for analysing prehistoric landscapes has been criticized for its inaccuracy, especially because the landscape has changed dramatically over thousands of years. Digital methods will help us to improve our analysis of different datasets, helping us consider other elements that are not so visible (Risbøl, Petersen, and Jerpåsen 2013, 520–21). There is an element of uncertainty in the accuracy of the models, as some areas — and especially the river plain areas along the Stjørdal River — have
Table 12.2. Overview of different sites and values. 12 m a.s.l. equals the sea level around 500 BCE (transition Late Bronze Age/pre-Roman Iron Age), 16 m a.s.l. around 1100 BCE (transition Early to Late EBA), and 22 m a.s.l. around 1700 BCE (transition LN/EBA). Numbers in parentheses are if we remove the values within the 12 m a.s.l. flooded areas, and disregard the considerations made by Sveian (1995) regarding what was dry land at 500 BCE.

<table>
<thead>
<tr>
<th>Site</th>
<th>500 m settlement</th>
<th>1000 m settlement</th>
<th>500 m agriculture</th>
<th>1000 m agriculture</th>
<th>Min. distance to sea-level at 12 m</th>
<th>Min. distance to sea-level at 16 m</th>
<th>Min. distance to stream or major water body</th>
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<tbody>
<tr>
<td>Skatval</td>
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<td>6.24 (4.97)</td>
<td>6.73 (6.24)</td>
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<td>327</td>
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<td>Stokkan V</td>
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<td><strong>5.64 (5.33)</strong></td>
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<td><strong>4.60 (4.43)</strong></td>
<td><strong>4.93 (4.77)</strong></td>
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<td><strong>Average at Hegra</strong></td>
<td><strong>5.23 (5.19)</strong></td>
<td><strong>5.51 (5.34)</strong></td>
<td><strong>6.38 (6.37)</strong></td>
<td><strong>6.29 (6.26)</strong></td>
<td><strong>1639</strong></td>
<td><strong>1351</strong></td>
<td><strong>727</strong></td>
</tr>
<tr>
<td>Average of ST rock art sites</td>
<td><strong>4.71 (4.65)</strong></td>
<td><strong>4.92 (4.77)</strong></td>
<td><strong>5.63 (5.53)</strong></td>
<td><strong>5.59 (5.49)</strong></td>
<td><strong>1244</strong></td>
<td><strong>1101</strong></td>
<td><strong>906</strong></td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.79</td>
<td>0.86</td>
<td>0.85</td>
<td>0.81</td>
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</tr>
</tbody>
</table>
been subjected to a reasonable amount of landscape change. Major landscape changes can be caused by meandering rivers eroding away river plains in the valley floor, causing the river to change its path and the erosion of larger areas of soil. Additionally, landslides must have occurred, and small streams might have altered their paths over time. The accounting for isostatic uplift, which indicates shoreline placement in a river valley such as this one, will be inaccurate to some extent, because it is hard to pinpoint exactly where the river was running at one specific point in time without extensive geological mapping (Sveian 1995). The calculations for isostatic uplift are considered relatively accurate (Sognnes 2001, 35–39), as the river must have eroded away the soil that originally created a landmass or terraces — laying higher above sea level than the soil level in the present-day landscape (Sveian 1995). Sveian (1995, 30–31) indicates a different landscape form than Sognnes (2001, 37) for around 1000 BCE. When calculating the distance to a major water body from each rock art site, we will document the minimum value between our maps based on isostatic maps, and the map of Sveian (1995, 31, fig. 18). Sveian (1995) argues that the sea did not go further east than about Reppe and Husbyåsen at 500 BCE. When elevating the sea in our dataset the whole area as far east as Hegre/Bjørgård is submerged. Because of this uncertainty, we have chosen to rely on Sveian’s calculations, and this area is marked by the hatch-pattern in our illustrations (Figs 12.2–12.4). While we are well aware of such processes of landscape change which might influ-

Table 12.3. Landscape averages for areas below 270 m a.s.l. and areas indicated as dry land at 500 BCE according to Sveian (1995).

<table>
<thead>
<tr>
<th>Landscape Averages</th>
<th>Settlement</th>
<th>Agriculture</th>
</tr>
</thead>
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<td>Standard deviation</td>
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<td>1.07</td>
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<td>Threshold value plus 1 std</td>
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<td>6.4</td>
</tr>
<tr>
<td>Threshold values minus 1 std</td>
<td>3.8</td>
<td>4.26</td>
</tr>
</tbody>
</table>

Figure 12.2. Map of Stjørdal with all the rock art sites, in relation to settlement conditions ranging from 1–9, with 9 (in green) representing the best conditions (map by Arne Anderson Stamnes).
Figure 12.3. Map of Stjørdal with all the rock art sites, in relation to agricultural conditions ranging from 1–9, with 9 (in green) representing the best conditions.

Figure 12.4. Rock art sites near ridges at the edge of agricultural land (figures by Arne Anderson Stamnes).
ence the applicability and detail level of the results, we still consider the overall results as representative for the analysis and the landscape in general.

Results and Discussion

The rock art in Stjørdal consists mainly of Southern Tradition rock art, with the exception of a few sites. Thus, this case study is well suited for investigating the relationship between ST rock art and the landscape, especially concerning proximity to water bodies, shorelines, and agricultural land. Our GIS models emphasize good agricultural conditions, settlement conditions, and proximity to water.

Our dataset (Table 12.2) and models (Figs 12.2–12.4) allow us to quantify the different aspects of the rock art sites that have previously been observed. This helps us to understand our observations better because we can both quantify our interpretations and highlight trends. We can also easily identify sites that stand out as exceptions, which are equally important.

The areas above 270 m a.s.l are excluded from the calculations, as this part of the landscape are at altitudes where agriculture was impossible unless temperatures were a degree or more above the average temperature during the Bronze Age (Stamnes 2016). Not taking the rock art sites into account and isolating the area below 270 m a.s.l, as well as what was land at 500 BCE according to Sveian (1995), the Stjørdal landscape’s average value for settlement is 4.78±0.98, while the value for agricultural conditions is 5.33±1.07. Looking at the data and the average value from our rock art sites (Table 12.2 and 12.3), there are some general trends/patterns to be observed, but some of the sites also stand out. We can also use these average values and the associated standard deviation to indicate threshold values for further analysis. Everything above 5.76 (4.78+0.98) or below 3.8 (4.78–0.98) for settlement and above 6.4 (5.33+1.07) or below 4.26 (5.33–1.07) for agriculture is statistically significantly different than the other values, and might indicate Southern Tradition rock art locations that somehow differ from the observed norm for the sites in Stjørdal.

The rock art panels are often placed at transitional areas in the landscape, in locations where the topography changes from flat to hilly. This often coincides with places where flatter areas of good agricultural land and settlement conditions transition to rocky or hilly areas, which reduces the average values calculated for each site (see Fig. 12.4). However, looking closer at the dataset, there are some deviations from the general picture. The overall impression is that the placement of the rock art sites in the landscape is more often related to good agricultural conditions, rather than good areas for settlement. In general, the values are higher for the agricultural conditions than for the values for good areas for settlements.

Focusing on the settlement conditions first (500 m radius), there are only four sites which differ from the general trend with a higher value (better conditions for settlement): Kil, Ingstad, Hegre, and Berg II. There are also three sites that stand out as worse than average: Stokkan I, Geving, and Stuberg. What is a bit baffling about this, is that we know the Husbyåsen site is located close to an LN/ENA settlement as mentioned above. This can mean that there are other aspects which we should have included in our dataset, where for instance a proximity to good areas for growing crops might be less relevant for settlements from this period. Looking at the average values, only thirteen out of thirty-four sites are better than the average value. It might also indicate that we need to re-evaluate the assumptions and data used to create the models, if settlements are still to be considered as an important localization factor. The map of the best conditions for settlements (Fig. 12.2) visualizes these results.

When focusing on the conditions for agriculture, however, the pattern is altered (Fig. 12.3). In general, we can see some trends, and as many as twenty-three out of thirty-four sites are located within areas with better conditions for agriculture than the average value for the landscape. So, while the method calculate what the typical average value for the entire Stjørdalen landscape is, we can statistically separate sites that score above or below this value. Within the 500 m radius, six sites stand out with a higher statistically significant value; Smågård, Hegre III and VIII, Bjørgård, Ydstines, and Berg II. The sites with a low value which stand out negatively are Stuberg, Geving, and Stokkan I. Interpreting this result, we can see a clearer link between the rock art sites and good conditions for agriculture than rock art sites and the modelled good conditions for settlements.

The high values in the Hegra Parish are particularly interesting, with high values also appearing at Skatval Parish. If we compare this with our previous observations on the rock art motifs, we can see that some of the sites seem to have been important centres through the four phases (Rokke, Auran, Ydstines/Berri, Hegre, Leirfall, and Fordal) (Sognnes 2001). This corresponds to some degree with the areas that have the best conditions for agriculture. Rokke and Auran do not score as high as Hegge and Skatval IV, but sites located in the Skatval Parish are well-represented in these statistics.
Because these numeric values represent averages for 500 or 1000 m radii, the topography plays a determining role in decreasing the average value when the distance increases. This is illustrated in Fig. 12.4, which shows how many of the rock art sites are found near edges of flat terrain, where good agricultural land transitions to a more sloped landscape. This is probably due to practical reasons since this is where ridges with exposed rock panels suited for carving are found. Additionally, they are located in landscape zones which could be interpreted as border landscapes; important places for contacting other ‘worlds’, or places where the control of different elements could be gained (Westerdahl 2005; Gjerde 2010; Steberglokken 2016). Considering that agricultural activity and animal husbandry are time and resource consuming, it is not inconceivable that rituals connected to these activities were important. However, there are no images of domestic animals such as cattle on the rock art. The only representations of domesticated animals are the horse figures that occur relatively often, particularly at Fordal. In spite of this, we do have archaeological findings suggesting that people in Beitstad, Steinkjer, kept cattle. An ox tooth found not far from the Bardal rock art site was radiocarbon dated to 3895±40 BP (2476–2210 cal. BCE, TUa-7564). This suggests an early start for animal husbandry, but not necessarily grain cultivation (Asprem 2012b). Neither does the rock art material show plough scenes or ploughed/‘ards’. When human figures interact with the horses, they are riding or holding the animal, not ploughing. There are also several images of horse figures depicted inside boats. Considering all these factors, we see domestication and husbandry in the archaeological record and in the rock art, but not cultivation. Why then does the rock art seem to relate to fertile land? Could it be that the archaeological evidence of cultivation is not yet found, the cultivation activity not intensified enough to leave traces, or maybe that crop cultivation was less important for the early agricultural settlements in the region? Or are the panels located close to fertile land, acting as a place for initiation or seasonal rites associated with cultivation?

The absence of cultivation scenes is baffling since this is more common from the material further south, such as in Østfold and Bohuslän. The rock art material in Stjørdal seems to be of a more symbolic character, with repetition of the same figures — for example, several boats forming a fleet, several footprints forming a pattern, or horses clustered together on the panel. The different figures show variation in type (standardization of attributes) and style (individual variation), which might imply that these figures were made through several visits and possibly by different individuals (Steberglokken 2016, 69; 2017, 41). This can be a result of rituals taking place by adding a figure to the rock art on a regular basis, connected to some form of activity.

We have also assessed how the rock art sites relate to water by measuring the distance to water from the nearest panel at each site for three different sea levels; twenty-two m.a.s.l: the transition from the Neolithic to the EBA, sixteen m.a.s.l: the transition from the EBA to the LBA, and twelve m.a.s.l: the end of the Bronze Age. There are three sites which stand out; Vikån, Gråbrekk, and Reppe. The locations of these rock art panels were submerged until the end of the Bronze Age at the transition to the pre-Roman Iron Age. However, the average value of the distance to water at twenty-two m.a.s.l is 906 m, at sixteen m.a.s.l the average value is 1101 m and at the end of Bronze Age at twelve m.a.s.l the average value is 1639 m (see Table 12.2). The sites located furthest away from the fjord by the end of the bronze age are Skjelstad (4946 m), Kil (3926 m), Arnstad (3234 m), and Skatval I–III (3086 m). We have also tried to see if there is a connection to smaller streams, but we cannot say for certain that these have not altered their paths, and we assume that this digital dataset is not exhaustive. There are five sites that are located in close distance to streams; Vikån (11 m to nearest stream), Gråbrekk (26 m to nearest stream), Reppe I (12 m to nearest stream), Leirfall (5 m to the nearest stream), and Stokkan V (8 m to the nearest stream). This distance is an average of all the panels at Leirfall, but both Leirfall II and Leirfall I are located right next to the stream, and panel II is actually partly flooded during spring and with heavy rain. The average value for all the sites is however 178 m to the closest stream, or the present-day trajectory of the Stjørdalen River.

What this data tells us is that most of the rock art sites in Stjørdal cannot be connected to the shoreline, which has of course previously been observed (Sognnes, 2001; 2003; 2012). The data quantify these observations and show us a clear trend along with the few exceptions. For the general trend of the material, we can say that closeness to the major water bodies (i.e. the Stjørdalen River or the Trondheimsfjord) is not a localization factor for the rock art in most cases. This is a strong contrast to Southern Tradition rock art sites in, for example, Bohuslän (Ling 2008). This is where the material baffles us once more, why then is the boat the most common motif? The boat is the most dominant motif throughout the ST rock art in the Nordics, and in Stjørdal as well. Sea travel and transport have been important since the earliest occupation of this landscape, and with the transition to the Bronze Age period, the control of transport...
and travel became even more important. In this context, the Trondheimsfjord and the Stjørdalen River are important landscape features. The boat represents the element at the centre of all this, making trade, travel, and warfare possible (Kaul 1998; Ling 2008; 2013). Being such an important element of society, the boat also functions as a symbol possibly representing control, power, and status or the elite. On the other hand, it can also symbolize the journey as a phenomenon — maybe the journey of life, rites of passages, or possibly even the last journey leaving this world. The location next to fertile land and depictions of the boat bringing livestock from far away could possibly point to an interpretation of the rock art as honouring or ‘initiating’ fertile land, as well as being a symbol of power, trade, and/or status.

When processing our different maps (Figs 12.2 and 12.3) based on our dataset, a pattern emerged in relation to distribution. Sognnes (1987; 2001; 2003) previously observed a distribution pattern, analysing these patterns and postulating territories with a radius of 1000 m, which we also implemented in our dataset. We also used a 500 m radius for our analyses, which shows that a great number of panels are found within these 500 m intersections. It is difficult to interpret what this 500 m radius means. Does this represent different territorial farm units? Or can it relate to the usage of new land or initiation of new land, in connection to shifting cultivation? In that case, could different panels in a 500 m radius represent chronological differences but still represent the same farm unit? We are not sure if we will ever have an answer to these questions, but further research on the distribution of Southern Tradition rock art could shed more light on early agriculture and settlement in this region. The 500 m radius can also be used in the search for new panels in the future, as this observation might hold a clue to past landscape divisions, and point to areas with ‘missing’ rock art sites. For instance, could there be a site between Smågård and Leirfall, where the 500 m radius intersects almost perfectly? (see Fig. 12.4).

Conclusion

Our main goal with this research was to determine if we could see a trend in how Southern Tradition rock art sites relate to the surrounding landscape, by looking at how the rock art is distributed using GIS analysis. This chapter focuses on the material from Stjørdal, applying datasets that enable the use of quantifiable data to see the distribution of rock art and its relationship to the landscape. In using this method, we are able to increase our understanding of the choices made by people in the past, and their rationale for choosing a location for their rock art. The advantage with this method is that the dataset can easily be changed or adjusted, and that it processes a large amount of data and visualizes it in a way that makes it easier for us to recognize patterns and outliers.

Through this analysis, we have been able to quantify previous observations, as well as make new ones. The rock art panels cannot be related to the shoreline, with a few exceptions. Focusing on the settlement conditions, the agricultural conditions, and closeness to water, our data imply that fertile land seems to be an important localization factor. The rock art material shows that some sites seem to have been important centres through the four phases from the EBA to the Iron Age. An interesting result is that our dataset for good agricultural conditions largely corresponds to these sites, particularly Hegra, Bjørgård, Ystines, and Skatval. Perhaps these sites should be seen as centres that served as hubs in the Stjørdal society, but it is difficult to confirm the chronology. By using just four boat types, with the last one showing attributes of younger elements like oars and masts, we do have some indication on the relative chronology. However, a detailed chronology, which could help us to better understand the relation between the different sites or panels, does not exist.

The distribution of the Southern Tradition rock art in Stjørdal contrasts with the general pattern further south in Scandinavia. That being said, the boat motif is dominant like in the rest of Scandinavia. We have suggested several interpretations of our results, as well as potentially seeing the rock art sites in connection with rituals performed in border landscapes close to fertile land. However, we need to develop the results from this case study further. There are other aspects which are difficult to include in landscape modelling, such as places important for local and/or seasonal traditions and ritual aspects such as deposition of Bronze Age hoards as the example from Hegra (Henriksen 2018). It will be interesting to use this method in other regions, for example Steinkjer or Frosta, where you find the coexistence of both Northern Tradition and Southern Tradition rock art.

The dataset and our distribution maps can also serve as tools to better characterize sites and pinpoint possibilities for finding undiscovered rock art panels. By adding slope degrees and the orientation of rock panels in a 500 m radius where no rock art is known, it is possible to calculate areas with the best conditions for finding rock art.
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This chapter is in memory of Professor Emeritus Kalle Sognnes. It is developed from previous work by Kalle who inspired and supervised both authors.

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Introduction

Quartz knapping at Bronze Age cairn sites is still a little-studied phenomenon in Fennoscandian archaeology. In Sweden, it has gradually attracted some attention, due to finds of dozens or even hundreds of kilograms of deposited quartz at some cairn sites containing Bronze Age and Iron Age burials (e.g. Lundborg 1972, 58–59; Carlie 1999; Goldhahn 2007, 174–78; Hägglström 2016). Some scholars have suggested that such depositions have occurred mainly or exclusively during the Iron Age use of the sites (Lundborg 1972; Carlie 1999). However, smaller quantities of knapped quartz have also been recovered from cairns that have yielded only Bronze Age dates, not only in Sweden (e.g. Hägglström, 2016), but also in Finland (e.g. Salo, Tuovinen, and Vuorinen 1992; Tuovinen 2002, 47; Okkonen 2003, 62–67, 76, 122; Holmlad 2010, 57–58, 61; Lesell 2010; Jansson 2011, 132–33; Saipio 2017, 333–34; 2018, 48–49, 51).

An interesting feature in the Finnish material is that the most notable finds have appeared outside of the south-west coast that was most heavily influenced by Nordic Bronze Age culture. In the south-western zone, rare quartz finds from Bronze Age cairns outside dwelling site areas typically consist of less than ten recovered flakes or implements. Assemblages of several dozen or several hundred, recovered pieces have so far occurred in ostensibly more peripheral areas of Bronze Age Finland, most notably the Bothnian Bay area and the Finnish Lake District (Vanhatalo 1988; Miettinen 1992; 1995; Saipio 2018, 48–49). Indications of local cairn building traditions pre-dating the Nordic Bronze Age have been noted in these areas (e.g. Okkonen 2003; Taiitsainen 2003; Holmlad 2010, 57–60; Saipio 2017; 2018), as well as in northern Sweden (e.g. Forsberg 1999, 257), and the Finnish southern coast (Jansson 2011, 132). In short, evidence for quartz knapping at Bronze Age cairn sites specifically in these areas can provide a new perspective of the phenomenon on a wider northern European scale.

This chapter provides a preliminary review of the potential for this research on Bronze Age quartz knapping in Finland. The existing evidence is still sporadic, and documentation varies. Therefore, in this instance emphasis is placed on the finds of my own recent excavations around Lake Louhivesi in the south-eastern part of the Finnish Lake District (Fig. 13.1). These observations are supplemented by five previous cases where a notable amount of quartz has been found in an attested or suggested Bronze Age cairn. Before proceeding to these fieldwork results, it is necessary to address some issues related to the interpretation of Bronze Age quartz knapping.

Possibilities and Challenges of Knapped Quartz as Cairn Find Material

The starting point of this article is that knapped quartz at Bronze Age cairn sites is essentially a source material of quartz-related ritual activities. Ritual is defined here following anthropologist Rappaport (1999, 24), as ‘the performance of more or less invariant sequences of formal acts and utterances not entirely encoded by the performers’. In the interpretation of archaeological contexts, the definition is useful in that it centres formality and the recurrence of action. The ritual interpretation of the material remains of quartz knapping need not be built on an argued particular ‘meaning’ of the action, but rather on detectable patterns suggesting a formalized set of actions. Here, it is important to note that the formality in ritual action does not mean absence of variation. Rappaport (1999, 36) points out that ‘details of no ritual are ever specified to such a degree that there is no room for some logically necessary or deliberate variation’. From a somewhat different point of view, Bell (1992, 183–86) empha-
sizes that performers of a ritual do not merely reflect some predefined symbolic meaning, but actively create meaning through their experiences. The ‘universal order’ that the ritual may be considered to embody is re-interpreted every time the ritual is conducted (see Bell 1992, 207–08). Therefore, some degree of variation should be expected in any category of ritual contexts, not only in chronological or regional terms, but also between individual sites. Within this variation, there should exist the less negotiable core of formalized action.

A study of the possible ritual dimensions of quartz knapping requires the acknowledgement of certain special properties related to the natural qualities of the material. Quartz as a coarse-grained igneous rock is abundant practically everywhere globally, unlike the more fine-grained versions of the same mineral (SiO2), such as flint and chert. It is more difficult to knap, due to fairly unpredictable fracturing caused by a highly asymmetrical crystal structure (e.g. Andrefsky 1994). However, it dominates the archaeological record of knapped stone tools in Finland, where the bedrock is totally devoid of flint and chert and contains significant concentrations of quartzite only in small sporadic areas (e.g. Knutsson and others 2011). Importantly, quartz remained as a crucial material for tools throughout the Bronze Age, and even throughout the Early Iron Age in the Finnish interior (e.g. Salo 1981, 302–03; Lavento 2001; Holmblad 2010, 80).

An abundance of quartz in Bronze Age contexts throughout Finland pose a set of problems in the interpretation of quartz pieces found in cairns. Firstly, there is the often cited problem that some coastal Bronze Age cairn sites are located on former or contemporary dwelling site areas, whose cultural layers apparently contained worked quartz predating the cairn (e.g. Salo 1981, 62–63, 70–74, 92–95; Okkonen 2003, 61–66, 126). However, this problem does not apply to cairns built on high bedrock.
promontories that constitute the great majority of Bronze Age cairn sites in the Finnish Lake District (Saipio 2018), and many coastal areas (Meinander 1954, 92–94; Salo 1981, 122; Tuovinen 2002, 202). A remarkable consistency in the landscape settings of such sites strongly suggest that the sites themselves were considered naturally significant, and ritual origin should, therefore, be the first hypothesis for any obviously prehistoric material discovered at these locations (Saipio 2018).

A more extensive problem is unreliable recognition and recovery of knapped quartz at cairn sites. The unpredictability in the fracturing of the material often hinders firm distinction between worked and naturally fractured quartz pieces. Therefore, the recovery or nonrecovery of fractured quartz that has no traces of retouching is very much influenced by presuppositions of individual field archaeologists. For a long time, quartz flakes were seldom recovered from Finnish Bronze Age cairns unrelated to dwelling sites, apparently because such a material was not expected to appear in ritual contexts. A sudden increase in the prevalence of quartz in the find catalogues of Bronze Age cairns is discernible in the 1980s in coastal Finland and in the 1990s in the Finnish Lake District. This turning point is probably related to a boom in prehistoric studies that generally raised the profile of quartz as a source material in Finnish archaeology. Obviously, huge differences in quartz recovery practices between different excavations make it very difficult currently to compare different cairn sites in terms of the quantity or even the very presence of knapped quartz.

Importantly, while a keen eye for possibly knapped quartz is obviously desirable during a cairn excavation, it does not remove the problem of subjective interpretations of quartz recovery. Selectivity in the collection of fractured quartz is unavoidable in any cairn excavation; the sites invariably contain weathered and otherwise fractured quartz from cairn stones and bedrock surfaces, and usually also natural quartz pebbles in a thin sand layer spread on the bedrock surfaces beneath the stone packing by builders of the cairn. Ostensibly, small differences in the degree of selectivity in quartz recovery could result in great differences in the number of recovered pieces. Therefore, it is important to acknowledge that the quantities of recovered quartz at the sites examined in this chapter are not comparable in terms of exact numbers. Equally importantly, it should be kept in mind that the examined sites demonstrate what kind of sites have so far yielded relatively large amounts of recovered quartz. Absence of evidence in other kinds of sites is not necessarily evidence of absence.

Previously Excavated Cases

Excavations of cairns on Neolithic or Early Bronze Age shorelines of the Finnish Bothnian Bay area have typically yielded either nothing at all or at most only small amounts of knapped quartz and/or quartzite (Okkonen 2003, 144–54; Holmblad 2010, 57–60). Burnt bone has been encountered only as plausible dwelling site material beneath some cairns (Okkonen 2003, 126 and references therein). Many of the quartz finds could also derive from settlement layers predating the cairn (Okkonen 2003, 126), but that does not seem a plausible explanation in every case. Also, the encountered quartz does not usually consist of artefacts easily interpretable as ‘grave goods’ (see Okkonen 2003, 144–54; Holmblad 2010, 57–59). Two cases are particularly illustrative of the need to broaden the scope of interpretation beyond the simple dichotomy between ‘grave good’ and ‘dwelling site material’.

In 1982, Päivi Pykälä-aho excavated seven cairns at a site named Karjakangas in the municipality of Kannus (Fig. 13.1). The cairn group had been built on the naturally very stony top of a high moraine ridge that constituted a narrow protruding cape at the turn of the Late Neolithic and the Early Bronze Age, c. 1800–1500 BCE, subsequently losing this close sea connection through continued isostatic land uplift (Pykälä-aho 1982; Okkonen 2003, 154; Holmblad 2010, 57, 59). All but one of the excavated cairns (some of which were seriously damaged) yielded 1–7 pieces of knapped quartz (Pykälä-aho 1982). According to Pykälä-aho (1982), the quartz find assemblage consisted of altogether sixteen flakes, one scraper, and two cores, one of which was interpreted as pièce écaillée (KM1 21490, 1–7, 10–15). The only other recovered finds were two hammer stones in one cairn (KM 21490, 8–9). All the quartz pieces that seemed to be in their primary context were recovered beneath piled stone packings, on a natural layer of fist-sized stones (Pykälä-aho 1982, 4–7). Extensive and systematic test pitting around the cairn group failed to unearth any traces of a dwelling site (Pykälä-aho 1982, 8), suggesting direct connection between the cairns and the knapped quartz.

The cairn site Finndalen in the municipality of Vöyri (former Oravainen) is in many ways different from Karjakangas but does have some similarities. Vöyri lies in the border zone between coastal areas influenced by the Nordic Bronze Age and the Bothnian Bay area. This makes the special features of the site all the more interesting. The site consists

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1 KM = Collections of the National Museum of Finland.
of a single cairn, sized $4.5 \times 5 \times 0.5$ m, located on a stony top of a moraine hill on the Late Neolithic shoreline (Vanhatalo 1988; Okkonen 2003, 122). Excavations by Simo Vanhatalo (1988) revealed a cist-like stone setting on the bottom of the cairn, possibly related to an inhumation which decayed in the acidic soil of Finland. Small traces of pottery were found around and beneath the stone setting, together with a fragment of a polished stone object (Vanhatalo 1988, 3). The pottery seems to represent Lusatian-influenced fine coastal ware, dated roughly to 1100–500 BCE (Holmblad 2010, 59). One spot on the very edge of the cairn yielded around 1 g of undetermined burnt bone (Vanhatalo 1988, 3). Knapped quartz was the largest find category; as many as 253 pieces, described as being of low quality, were recovered from ‘stoneless, brown, sandy soil around the burial cairn’ (Vanhatalo 1988, 3). Reminiscent of the situation with Karjakangas, the test pitting that hoped to reveal a possible dwelling site around the cairn failed to yield any evidence (Vanhatalo 1988, 3).

It does not seem plausible that the finds represent informal activities unrelated to the cairn. As pointed out by Okkonen (2003, 122), it is hard to explain why a former activity area on a Neolithic shoreline would exactly coincide with a Bronze Age cairn. Furthermore, fine Lusatian-influenced ceramics were apparently not produced for everyday use (e.g. Salo 1981, 317). It seems likely that the quartz had been knapped or deposited around the perimeter of the cairn after it had already been built.

Intriguing new evidence of the longstanding significance of quartz knapping or deposition at coastal cairn sites in Finland was unearthed by Henrik Jansson (2011) in 2001, at a site known as Björkholmen 1 in the present-day municipality of Raasepori in western Uusimaa, on the southern coast of Finland (Fig. 13.1). The excavated stone structure was a shallow long-cairn ($20.9 \times 3.5–4.1 \times 0.2–0.3$ m) built on bare bedrock, at a site that belonged to a small skerry during the Late Neolithic and the Early Bronze Age (Jansson 2011, 132–34). The material culture consists of four flint arrowheads and 112 pieces of knapped quartz (KM 32797). The arrowheads belong to the widespread North Eurasian ‘straight-based’ lithic arrowhead type that spread into Fennoscandia from Russia during the Late Neolithic and remained in use well into the Late Bronze Age. According to Jansson (2011, 132), all the arrowheads of Björkholmen 1 represent a relatively short and wide subtype datable to the Late Neolithic and the Early Bronze Age. Lithic arrowheads are very unusual finds for coastal Bronze Age cairns in Finland. Jansson (2011, 132) suggests that the cairn represents an early eastern Fennoscandian cairn-building tradition, since it lies above the Late Neolithic shoreline, as is also the case with other very long and shallow cairns in western Uusimaa.

The quartz find assemblage of Björkholmen 1 consists of eighteen implements (such as scrapers and knives), eighty-three flakes, four cores, and seven raw material pieces, according to analysis by Rankama (2001). Knapped quartz was encountered throughout the whole cairn area, both within and beneath the stone packing, indicating that at least part of the material had ended up in the cairn after it had already been built (Jansson 2011, 132–33). However, Jansson (2011, 132) also asserts that some pieces of knapped quartz seemed to have been carefully placed beneath or between cairn stones. Interestingly, there was a natural quartz vein beneath the western end of the cairn, although it had no obvious connection with the spatial distribution of the quartz finds (Jansson 2001, 7, Map 9). All in all, the excavation results of Björkholmen 1 provided convincing evidence of early ritual significance of knapped quartz at Finnish Bronze Age cairn sites, but also raised an array of unanswered questions about the ritual practises behind the multifaceted presence of quartz in the cairn.

Before the excavation of Björkholmen 1, considerable quartz assemblages also had started to appear from cairns in the Lake District. In 1992, Miettinen (1992) excavated a cairn on a lake island named Lapinsaari in the municipality of Littij in the south-eastern Lake District (Fig. 13.1). The cairn lay on a bedrock promontory and contained a thin layer of sand beneath the stone packing which was apparently transported there (Miettinen 1992, 2–3). This is typical for Bronze Age and Early Iron Age cairns in the Lake District. The cairn was partially damaged and featured a partial kerb structure that may have originally surrounded the whole cairn, whose original diameter was estimated by Miettinen (1992, 2) as perhaps 8 m with an original height of somewhat less than 1 m. Echoing the case of Björkholmen 1, the excavation yielded a sizeable amount of knapped
quartz unaccompanied by burnt bone. Altogether 346 pieces of quartz and a single flint scraper were recovered (KM 27681).

The interpretation of the quartz material was complicated by several natural quartz veins in the bedrock surface beneath the cairn and immediately south of it (Miettinen 1998, 84). According to Miettinen (1992, 2; 1998, 84), these veins had clear traces of knapping and fracturing. However, he determined eight scrapers, eight possible scrapers, four ‘implements’, and three ‘possible implements’ among the quartz material, together with 102 flakes that he interpreted as clear and without question as to their function (Table 13.1). He described the flaking and retouching technique of the quartz scrapers as primitive and the general quality of the used quartz material as low, indicating that it may have been extracted from the veins at the site itself (Miettinen 1992, 2). Quartz was encountered not only beneath the cairn but also in two earth-filled bedrock pits 2.5 m north-east and south-east of the cairn (KM 27681; Miettinen 1992, 2). The latter also yielded a flint scraper (KM 27681, 22; Miettinen 1992, 2).

According to Miettinen (1992, 2) all the quartz in the cairn was found within the sand layer beneath the stone packing. The finds were apparently clearly concentrated on the perimeter of the cairn, especially those finds which were interpreted as unambiguous (Table 13.1). The stratigraphy between the quartz finds and the kerb remains uncertain, since the extant part of the kerb was left unexcavated (Miettinen 1992, 3).

The abundance of quartz finds in the sand layer indicates that the material culture cannot be explained by a dwelling site predating the cairn (Miettinen 1998, 84). Furthermore, the narrow north-oriented promontory would have been an odd choice for a dwelling site, especially since the quartz in the veins was obviously ill-suited for tool making. It seems clear that the knapped quartz and the cairn had some direct connection. The difficult question is what the exact nature of this connection was. The concentration of the quartz material on the very edges of the cairn suggests that quartz was knapped or deposited around the cairn during or after the building process. On the other hand, if some or all of the knapped quartz originated in the quartz veins beneath the cairn, quartz extraction must of course have occurred at the site before the cairn was built. It is quite possible that the excavated quartz derives from multiple knapping and/or deposition episodes. Finds in the earth-filled pits suggest that the bedrock surface may at some point have contained much larger amounts of knapped quartz, and possibly flint.

The exact date of the Lapinsaari cairn remains unknown, since ritual/burial cairns continued to be built in the Lake District well into the Iron Age. However, quartz finds from another cairn site in the municipality of Litti tentatively suggest a Bronze Age origin for the Lapinsaari cairn, together with the lack of typical Iron Age material at Lapinsaari (see Saipio 2017, 331–32). In 1995, Timo Miettinen (1995) excavated an elongated double-cairn named Hiidensalmi some 21 km from Lapinsaari (Fig. 13.1). The excavation yielded 65 g of burnt bone, fifty-five quartz flakes or possible quartz flakes, and a large bowl-shaped natural stone set near the bone finds (KM 30663; Miettinen 1995; Mannermaa 2010). Reminiscent of the situation with Lapinsaari, Miettinen (1995, 3) describes the recovered quartz pieces as being of low quality and having all been found in a thin sand layer between the cairn and the bedrock surface below. Bone was only found in a small area in one of the cairns, while knapped quartz occurred in both cairns (KM 30663; Miettinen 1995, 3). At least most of the bone material consists of human bone (Mannermaa 2010), a sample of which has been AMS dated to the Early Bronze Age, Hela-2519, 3160±31 BP, or 1501 (95.4%) 1323 cal BCE2 (Saipio 2017).

The attested presence of burnt human remains might be seen as setting Hiidensalmi apart from the other cases described above. However, each of the other four sites is also distinct in its own way, suggesting that there may have been a variety of ritual practices behind the presence of knapped quartz at all of them. However, none of the five sites provide any grounds for interpreting the quartz finds as ‘dwelling site material’. Distribution of the finds suggest a direct connection between them and the cairn(s) in every case. Therefore, it seems reasonable to assume that there was a widespread tendency to involve quartz in cairn related rituals in Bronze Age Finland.

Quartz Finds in Bronze Age Cairns Around Lake Louhivesi During the 2014–2016 Excavations

Distances between the sites examined above and uncertainties in their chronological relations make it hard to define a common core behind the considerable variation. To this end my excavations around Lake Louhivesi in 2014–2016 provide a geographically and temporally focused case study.

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2 All radiocarbon dates cited in this article have been calibrated with OxCal 4.2 program (Bronk Ramsey 2009), using IntCal13 calibration curve (Reimer and others 2013).
Lake Louhivesi in the municipality of Mikkeli (former Ristiina) is one of the most significant known concentrations of Bronze Age dwelling sites and cairn sites in the Lake District. Especially notable among the latter are two clusters of cairns on two former lake islands which are found 9 km from each other. I refer to these Bronze Age islands as ‘Kitulansuo island’ and ‘Hietaniemi island’ (Fig. 13.1), the former currently being located by a mire named Kitulansuo, and the latter in a cape named Hietaniemi. On Kitulansuo island, there are three cairns in different parts of a steep bedrock ridge, Kitulansuo A–C. The cluster on Hietaniemi island includes four cairn sites on the edges of the former rock island, Piikinperse A–C and Hietaniemi. Piikinperse C is a double cairn, while the rest consist of single cairns. Two cairn sites in each Bronze Age island have been excavated by the present author, Kitulansuo C, Kitulansuo B, Hietaniemi, and Piikinperse C. Quartz was recovered at every site, in addition to burnt human and animal bones; the double cairn at Piikinperse C also yielded two flint flakes. AMS dates of Kitulansuo B and C and Hietaniemi fall uniformly in the Early Bronze Age and cluster in the period 1400–1300 BCE (Table 13.2). Piikinperse C was probably built several hundred years later than the other excavated cairns, since the two very similar AMS dates from the site are within the range 1130–970 BCE (Table 13.2). Continued use of Kitulansuo island and Hietaniemi island were contemporary ritual areas that were apparently developed side by side. This makes similarities and differences between the cairns in these two islands especially interesting.

The quartz finds of the excavated cairns show intriguing variations within a general pattern. Especially notable is variation in terms of the quality and homogeneity of recovered quartz flakes regarding raw material and indications of knapping. A preliminary macroscopic analysis of the material in terms of discernible traces of knapping and possible use wear has been conducted by Eranti (2017). He classified the finds of the four sites into four interpretative groups on the grounds of both evidence of deliberate working and the quality of the quartz as raw material: cores, high quality flakes, flakes, and crushed quartz (Eranti 2017, 3–4). The three latter groups are subsequently referred to as Classes 1–3 (Table 13.2). Class 3 represents coarse-grained quartz whose fracturing could have resulted from natural processes. Classes 1–2 consist of pieces where Eranti (2017, 4) saw traces of directional knapping. Basic criteria for Class 1 was a clearly discernible platform remnant, a potential for retouching, and a crystal structure suitable for tool material. Eranti (2017, 16) did not perceive retouching or use-wear in any of the recovered quartzes.

### Table 13.2. Excavated cairns of Lake Louhivesi and their quartz finds as classified by Olli Eranti (2017).

<table>
<thead>
<tr>
<th>Site</th>
<th>Size (m)</th>
<th>AMS dates BP (burnt bone)</th>
<th>AMS dates cal BCE (95.4%)</th>
<th>Class 1 quartz</th>
<th>Class 2 quartz</th>
<th>Class 3 quartz</th>
<th>Quartz cores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitulansuo C</td>
<td>9 x 6 x 0.4–0.5</td>
<td>Hela 3635: 3044 ± 25</td>
<td>1395–1220</td>
<td>47</td>
<td>8</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hela 3636: 2914 ± 26 (human)</td>
<td>1210–1015</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitulansuo B</td>
<td>10 x 5.5–6.5 x 0.3–0.4</td>
<td>Hela-3733: 3079 ± 27 (human and mammal)</td>
<td>1415–1265</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hietaniemi</td>
<td>7 x 7.5 x 0.5</td>
<td>Hela-3815: 3138 ± 30</td>
<td>1500–1300</td>
<td>7</td>
<td>7</td>
<td>24</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hela-3816: 3050 ± 28 (human)</td>
<td>1400–1225</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piikinperse C</td>
<td>7 x 2.5–5.2 x 0.3–0.5 (combined)</td>
<td>Hela-3937: 2867 ± 28 (human)</td>
<td>1125–930</td>
<td>10</td>
<td>—</td>
<td>45</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hela-3938: 2880 ± 26 (human)</td>
<td>1190–940*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*With precision of 92.8% the date would be 1130–975 cal BCE.

Kitulansuo Island

Intriguingly, the two most different sites regarding quality of quartz material were Kitulansuo C and B, despite spatial proximity (60 m), very similar shape, and very similar AMS dates (Table 13.2). Kitulansuo C revealed a partial stone cist whose bottom was filled with small stones and silt, yielding some 196 g of burnt human and animal bone. The minimum number of individuals (MNI) that the cluster of human bones may belong to is two (Vuorenmaa 2014). The cist yielded no quartz finds, but fifty-five quartz flakes were recovered from outer areas of the cairn. Most of them were recovered near the bedrock surface in peripheral parts of the somewhat damaged cairn, but some clearly appeared between stone layers, indicating that they had ended up in the cairn after it had already been built. The quartz material was notably homogenous, mostly representing a grey, slightly greasy variety that would obviously
have made an excellent tool material, as noted by Eranti (2017, 12). Eranti (2017, 12) classified most of the material as Class 1 (Table 13.2), suggesting that these bluish-grey flakes derived from a few fist-sized pieces of homogenous material. It seems clear that this raw material was intentionally brought to the site to be knapped or deposited, since there were no quartz veins in the bedrock peak beneath and around the cairn. Spatial distribution of the flakes may suggest knapping on the edges of the cairn, although no cores were found.

As implied above, Kitulansuo B told quite a different, but no less interesting, quartz related story. There was no stone cist and the bone finds consisted of less than 4 g of burnt bone in a very restricted part of a thin sand layer beneath the stone packing (Fig. 13.2). Interestingly, even this small material contained both clear human bone and likely nonhuman mammal bone, according to the osteological analysis by Vuorenmaa (2015). The most interesting structural feature in the cairn was that its long axis followed exactly a series of quartz veins in the underlaying bedrock surface (Fig. 13.2). The quartz in the veins was mostly coarse-grained and impure, fracturing easily. However, in some parts of the cairn, there were possible quartz flakes that could not have ended up in their find spots by breaking away from the quartz veins in situ. Such pieces numbered only ten, but some of them were recovered above the lowermost stone layer. These pieces were generally coarse-grained, just like the quartz in the veins. Eranti (2017, 10) classified all of the material as Class 3, i.e. it could derive from natural fracturing (Table 13.2). It is possible, however, that the pieces had been removed from the veins to be later deposited in the cairn, although the veins had no traces of large-scale quarrying. What seems clear is that the shared alignment of the cairn and the series of quartz veins is intentional. This presence of coarse-grained quartz as a natural structure at Kitulansuo B provides an interesting contrast to the presence of the externally provided high quality quartz at Kitulansuo C.

**Hietaniemi Island**

The excavated cairns of Hietaniemi island resembled Kitulansuo C more than Kitulansuo B in terms of quartz and bone finds, even though they differed from both in size and shape, also differing in date in the case of Piikinperse C (Table 13.2). Cairn ‘Hietaniemi’ was roundish in shape and contained no stone cist, the only discernible structure being a fallen standing stone on its south-western edge (Fig. 13.3). It resembled Kitulansuo C in that it yielded c. 116 g of burnt human (MNI 2) and likely animal bone in a fairly compact area around the centre, while thirty-seven pieces of quartz were recovered outside the bone find area (Vuorenmaa 2016a). In contrast to both excavated Kitulansuo cairns, the quartz was of highly variable quality. Eranti (2017, 5–6) notes three elongated flakes of transparent, almost glasslike quartz among the material, which he classifies as Class 1, seven Class 2 pieces that he describes as ‘normal-quality flakes of bipolar knapping’, and twenty-four uncertain flakes classified as Class 3. In addition, he also labels three recovered pieces as cores (Eranti 2017, 5–6). Eranti (2017, 15) suggests that the three glasslike flakes, at least, may have derived from different raw material pieces than the rest of...
Considering this, it is of interest that these flakes were all recovered from the easternmost edge of the cairn, but not all together (Fig. 13.3). Together with other finds from the outmost edges of the cairns, this suggests knapping around the stone packing after it had already been piled. However, there were also flakes and cores found from the bottom of the cairn beneath several densely packed stone layers, for which such a scenario does not seem plausible. A total lack of knapped quartz in the very centre of the cairn tentatively suggests that these pieces did not travel to the site within the sand layer spread beneath the cairn (see Fig. 13.3). In short, it seems that there was more than one knapping/deposition episode at the site.

The double cairn Piikinperse C introduces yet another distinct pattern of lithic finds. Reminiscent of the Hiidensalmi double cairn in Litti, only one of the two cairns yielded burnt bone (c. 58 g), while quartz (fifty-six pieces) was recovered from both of them (Fig. 13.4). The two flint flakes were found in the cairn that contained burnt bone, the bone was concentrated around a single stone slab set in a bottom layer of sand and small stones. The bulk of the bone was clearly human (MNI 1), possibly accompanied by some other large mammal (Vuorenmaa 2016b). The cairn had a half-fallen standing stone on its eastern edge, and, curiously, also a smaller standing stone within the stone packing, near the main bone cluster. Just west of this enigmatic feature, there were traces of intrusion in the stone packing, accompanied by a small amount of exceptional bone material that contained incompletely combusted fragments, as well as a fragment determined to be a beaver-sized mammal (Vuorenmaa 2016b). There were no traces of fire in the stone packing.

Lithic finds seem to reflect the generally complicated picture arising from the double cairn. According to the analysis by Eranti (2017, 7–9), the quartz finds fall into two distinct categories regarding clarity of knapping and quality of raw material. Ten of the recovered pieces were classified as Class 1, while the rest of the material consisted of twenty-four Class 3 pieces and one core (Eranti 2017, 7). The bulk of the quartz and one of the two flint flakes were recovered near the southern and northern edges of the double cairn (Fig. 13.4). ‘Innermost’ finds within these find belts lay within the stone packing or in gaps between stones. In short, it seems likely that most of the recovered quartz material had been knapped/deposited at the site after both cairns had already been built.

However, there were notable exceptions to this pattern. A few quartz flakes and the other flint flake were found in two earth-filled bedrock pits beneath the cairn, near the anomalous bone finds. These flakes may have ended up in their find contexts as a result of the enigmatic intrusion in this part of the cairn. However, they bring to mind the quartz and flint finds in the earth-filled bedrock pits at Lapinsaari. Furthermore, one Class 1 quartz flake was found beneath several dense stone layers immediately south of the main bone find area (see Fig. 13.4). In short, there may have been stone knapping at the site also before the stone were packed around the larger cairn.

All in all, the excavated cairns of Lake Louhivesi have much in common in terms of quartz. Every cairn yielded quartz finds, in addition to variable amounts of burnt bone. Furthermore, the bone material and the quartz material were invariably found in different parts of the cairns, the distribution of quartz being consistently more peripheral. At all the four sites, there was evidence for knapping or deposition of quartz around the edges of the cairns. At the excavated cairn sites of Hietaniemi island, there were also indications of quartz knapping that took place before the stone packing was piled. It does not seem likely that the multiple episodes of quartz knapping/deposition were related to informal activities at the
cairn sites, especially considering the consistent absence of evidence for purposeful tool production in the archaeological material. The complete lack of ceramic sherds at the sites is also notable in this context. Ritualized connections between quartz and the cairns is also indicated by the conspicuous quartz veins beneath the Kitulansuo B cairn. Interestingly, differences between the quartz assemblages suggest site-specific ritual variation rather than chronological developments. The high quality of quartz at Kitulansuo C could be seen as reflecting a distinct emphasis on the visual appearance of ritual action, together with the repeatedly used stone cist. Similarly, the scarcity of burnt bone and the lack of obviously externally sourced quartz at Kitulansuo B may reflect the special role of the quartz veins in the ritualization of this particular cairn site.

Conclusions

The combined examination of quartz assemblages of Bronze Age cairns in the Lake Louhivesi area and other parts of Finland reveal two strikingly consistent patterns, despite considerable variation in detail. Firstly, the finds generally cannot be explained as the remains of purposeful tool production. It appears rather that the knapping itself has been more important than the quality of results. Importantly, a similar pattern has been noted at Swedish Bronze Age and Iron Age cairn sites (Carlie 1999). Such a pattern suggests that the physical action resulting in ostensibly useless flakes reflected ritual behaviour whose formality was related to a deviation from the usual way to treat quartz. In this context, it is of interest that the largest Finnish finds mostly date to the Early Bronze Age, in some cases possibly even to the end of the Late Neolithic, in contrast to the dominance of the Iron Age in the Swedish material. Together with indications of local cairn building traditions in Finland, this chronological difference suggests that ritualized quartz knapping at cairn sites was not a single tradition, but a repeatedly realized potential in prehistoric Fennoscandia. In all likelihood, the existing research provides only glimpses of the various forms of the still little-studied phenomenon.

Besides the ‘non-functional’ appearance of knapping, another strikingly consistent feature in the material is that the quartz finds seem to be spatially unrelated to burnt bone depositions — some quartz yielding cairns were totally devoid of bone finds. In the cases where burnt bone was found in the cairn, it mostly occurred in a limited area in the centre of the cairn, while quartz was mostly encountered in outer parts of the stone packing. Especially notable here is that the two double cairns in the material, Hiidensalmi and Piikinperä C, both yielded burnt bones only in one of the connected cairns, while knapped quartz was found in both cairns. At some sites, most notably Kitulansuo C, part of the quartz material was clearly recovered between stone layers, indicating that it post-dated the piling of the stone packing. Evidence pointing to this direction was also provided by clusters of knapped quartz on the very edges of some cairns, most notably Finndalen. However, finds of clearly knapped quartz were also made beneath dense stone packing at many of the sites. Some of these sites crucially yielded quartz finds both beneath and above dense stone packing, as well as around the perimeter of the cairn. Such a variety of find contexts can be firmly pointed out at Hietaniemi, Piikinperä C, and Björkholmen 1, while a fairly complex picture also seems to arise from Lapinsaari. Some of this variety could be related to modification of the stone packing during reuse of the cairn, or other post-depositional processes, but such processes are unlikely to explain the differen-
All in all, it seems that at least some of the assemblages of knapped quartz derive from multiple episodes. These activities taking place may have been of a variable nature, including both depositions beneath the cairn and knapping around it. Repeated use of the cairn sites for an unknown variety of activities is suggested especially by the complex picture arising from Piikinperse C. In all likelihood, most of the original material remains left behind by repeated Bronze Age visits to the sites decayed long ago, while quartz and the occasional flint survived together with burnt bone (and pottery in the case of Finndalen). It is quite possible that the sites already functioned as scenes of ritual activities before they received cairns. Clusters of spatially separate cairn sites in the two former islands of Lake Louhivesi strongly suggest that cairns were not built on just any promontories that met some outward criteria. Considering this, it is of interest that Kitulansuo B was built along a series of natural quartz veins, but yielded no clearly knapped quartz, unlike all the other excavated cairns around Lake Louhivesi. Unfortunately, the significance of natural quartz veins beneath the cairns of Kitulansuo B, Björkholmen 1, and Lapinsaari is currently hard to assess, due to the strong special features of each site. However, it is perhaps notable that of these three cairns, Kitulansuo B contained only a very small amount of burnt bone, while the two others yielded none at all. This fact further emphasizes the potential of quartz as a source material of quartz-related ritual activities at Bronze Age cairn sites.

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14. Bridging Perspectives

Social Dynamics of Houses and Households
in the Nordic Bronze Age

Introduction

The architectural layout of the North European long-house was one of the most innovative and tenacious technologies from the Early Bronze Age. Emerging alongside changes in clearance, cultivation, and animal husbandry, and outlasting era-defining features like monumental burial mounds, rock art, and bronze objects, the three-aisled longhouse would stay in use for almost three thousand years.

The longhouse is introduced in the first half of the Late Neolithic as a two-aisled construction, with a single line of roof-supporting posts supporting crossbeams along the house’s width. We focus herein on the three-aisled longhouse, recognized by two rows of roof supporting postholes, enabling a more stable construction. This solution emerges in Scandinavia c. 1700 BCE and replaces the two-aisled construction around 1600 BCE (e.g. Børsheim 2003; Artursson 2005; Larsson and Brink 2014); similar changes can be identified across northern Europe (e.g. Fokkens 2003; Bech, Eriksen, and Kristiansen 2018). The introduction of the three-aisled longhouse changed the architecture, economy, and life-worlds of its inhabitants, even the course of history, as it would constitute the ubiquitous form of dwelling for millennia to come (Armstrong Oma 2016; Eriksen 2019).

The prehistoric house as a locus of archaeological research in Scandinavia has developed in two broad directions. One of these focuses on functional, economic, and political aspects of the house through general anthropological models (e.g. Earle and others 1998; Kristiansen 1998; Artursson 2009; Austvoll 2018). The other focuses on the socially embedded facets of the household (e.g. Webley 2008; Sørensen 2010). These approaches mirror a greater theoretical discussion that is often dichotomized as top-down versus bottom-up. This divide, a legitimate though simplified categorization of current research, leads to a tendency towards parallel discourses.

This chapter is an explorative attempt to bridge contrasting top-down and bottom-up perspectives on houses and households in Scandinavian prehistory. Following Prescott (2005), quoted in the epigraph, our objective is to examine the interplay between practice and ideology expressed and lived through the longhouse. We see the house as an arena that mediates between top-down and bottom-up processes. From a bottom-up perspective, the house facilitates discursive and nondiscursive practices: the construction and negotiation of, for example, gender, ritual, and social cohesion. From the top-down, the house iterates hierarchical guidelines that facilitate political negotiations, alliances, and an outward expression of power and wealth that legitimizes kinship and trading ties.

Our discussion draws on a dataset of thirty-two longhouses from south-western Norway (Fig. 14.1), fourteen from the Early Bronze Age (EBA, c. 1700–1100 BCE) and eighteen from the Late Bronze Age (LBA, c. 1100–500 BCE), extending into the Early Iron Age. With a sample of thirty-two houses from one specific region, we acknowledge that the

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findings here will not be universal for the Nordic Bronze Age. Nevertheless, the patterns observed within this region may tease out general trends, while serving as a rich case study from both ends of the interpretive scale. The observations we make by interweaving top-down and bottom-up perspectives are thus intended as the beginning of a discussion rather than an end.

**A Top-Down View:**

**Social and Political Organization**

Top-down approaches, often linked to processualism, emphasize interregional and cross-cultural development. Top-down narratives usually focus on empirical evidence in order to investigate larger socio-political phenomena, such as settlement organization, hierarchy, property rights, and economy (e.g. Løken 1998; Artursson 2015). Often, these data are in turn used to conduct overarching studies of emerging
complexity of past societies (e.g. Earle 1997). A primary strength of top-down approaches is that they provide a framework where substantial quantities of data can be synthesized and used to discuss generalities on an interregional scale. For our case we see a potential for discussing general trends related to economic incentives and subsequent power strategies. The central parameters used from a top-down perspective herein are house chronology, house size, economy and subsistence patterns, and finally political power and maritime control.

**Chronology**

The houses under consideration date from c. 1700–500 BCE. Most of the houses are radiocarbon-dated, a minority have been dated based on stratigraphy, house, and artefact typology (for information on specific sites, see references listed in Table 14.1). The radiocarbon dates for each house were analysed using a 95.4% probability range (n = 25 houses). However, for the sake of visualization we have used the median average in OxCal to envisage the number of houses in each period. Obviously, the correct date may lie somewhere within the entire probability range, but nonetheless this approach provides an impression of development through time. Using the summed calibration in OxCal of all the 14C dates related to house structures reveals a correlation of the median average. While the summed calibration does not give a robust sample for comparison, it may still be relevant when merged with other archaeological proxies and further studies. It is worth noting, however, that the highest probability density exists from around the turn to the pre-Roman Iron Age — of course, the precision here is severely hampered by the Hallstatt plateau (cf. Jacobsson and others 2018). Nevertheless, an initial peak occurs around 1700–1600 BCE, with a separate, more distinct peak around 1400–1300 BCE, and lastly there is a final peak around 550 to 400 BCE (see Fig. 14.2). These peaks could be related to an upsurge in activity, perhaps indicative of periods where economic activity was...
particularly stable or agricultural yields were high, or even when power was cycling between regions (cf. Junker 1999). Ideally, these data should be tested against neighbouring regions.

House Size

Variation in house size is frequently used as an indicator of power and hierarchy in prehistory. This is resonates with one of the most frequently critiqued aspects of top-down approaches in archaeology, as critics claim they project modern economic ideas of power and wealth onto prehistoric societies (e.g. Brück and Fontijn 2013). Nevertheless, house size variation may elucidate diachronic patterns, which may in turn reveal influence by supra-regional trends or altered local conditions. For comparison, the general trend in Denmark and Sweden suggests a peak in size between Period I and II in the EBA, followed by a steady decrease in size from Period III through the LBA and the pre-Roman Iron Age (e.g. Holst and others 2013, 282; Artursson 2013, 95). This is often explained as a change from hierarchical based society in the EBA toward a more self-sustaining system based on smaller farmsteads and villages (e.g. Kristiansen 2006; 2013). Although a small sample size, in south-west Norway the size variation is similar to its southern and eastern counterparts, particularly visible between the EBA and LBA:

- EBA houses (n = 11, excluding partial houses):
  Approximate average house size, 124 m².

- LBA houses (n = 17, excluding partial houses):
  Approximate average house size, 91 m².

The immediate distinction between the two phases is interesting and could be used to argue for a change in household organization. The largest house in south-west Norway, located at Kleppestemmen (216 m²), dates to the EBA I–II (Berge 2007). To build such a large house was labour intensive and may have required some form of leadership. It would also have been highly timber demanding in a region that was largely deforested by the end of the Late Neolithic (Prosch-Danielsen and Simonsen 2000). The construction of relatively large houses seems to extend throughout the EBA (see Table 14.1). These include the houses at Kleppestemmen, Austba, Myklebust, and Tjora. Perhaps these longhouses represent households from which political control and alliance maintenance were exerted. Intriguingly, even the ‘medium-sized’ houses from the EBA, like Norheim (121 m²) and Tengesdal (114 m²), are approximately the same size as the largest houses of the LBA. Moreover, it is interesting to note that most of the later houses seem to hold a more discrete feature in the landscape, reminiscent of core-family households — perhaps indicative of organizational changes from the EBA to LBA.

Variation in house size could have many explanations. A top-down interpretation is that size is communicative of power, status, and wealth. In areas such as south-west Norway, where there is significant size variation overall, smaller contemporary houses could reflect a lower class or even slaves (e.g. Earle and Kristiansen 2010, 231; Ling, Earle, and Kristiansen 2018), whilst overall size variation over a longer time-frame could be indicative of more large-scale organizational changes. Such alternatives need to be seen in relation to broader contextual frame of references. Still, that size can express variation in household organization seems plausible, particularly when we connect the largest houses with other archaeological datasets like the richest burial mounds in the region, as we do below.

Economy and Subsistence Traces

After topsoil removal by mechanical diggers, settlement sites are often fragmentary and preservation highly dependent on local soil conditions. From the exceptionally well-preserved site of Must Farm in Whittlesey, England, it is evident how many everyday artefacts were made of organic materials (Malim, Morgan, and Panter 2015). The acidic soil in Norway, however, has very poor preservation properties, and any organic remains have usually disintegrated. We are thus faced with a skewed picture of the economy and subsistence of Bronze Age households, based solely on resilient materials such as lithics, ceramics, and charred grains. Still, the compiled evidence does allow us to comment on general activities that took place. Moreover, archaeobotanical methods have significantly furthered our understanding of prehistoric cultivation (e.g. Prosch-Danielsen and Soltvedt 2011). The potential for a varied economy corresponds well with the natural geology of the region; thick Quaternary deposits provide good conditions for cereal cultivation in the north, whereas clay deposits in the southern part of the region are best suited for animal husbandry (Prosch-Danielsen, Prescott, and Holst 2018). Relying on a varied set of economic sectors tends to create a particular robust staple economy (e.g. Scott 1976), which may help facilitate investments in other aspects of society.

The change to a three-aisled construction has traditionally been ascribed to intensified grazing pressure, utilization of secondary products, and indoor stalling of domesticated animals (Rasmussen 1999; Fokkens 1999). The segmentation of architectural space together with intensification of the subsist-
ence economy has been argued to correlate with an increasingly complex political economy and demand for prestigious items (e.g. Kent 1990). However, the availability of land and resources does not in itself prescribe wealth, status, and power. Instead, resources are involved in a political economy and subjected to control or even restriction. The upper strata of society are particularly empowered by this process; by controlling production and distribution of the surplus economy, the elite can convert resources to wealth. Whereas mountainous resources linked to hunting products like fur are difficult to control, their distribution and trade were most likely channelled and potentially controlled through maritime nodal points along the coast. For such an organization to have been possible, certain households must have relied on alliance ties and frequent communication across land and sea.

Political Power and Maritime Control

The erection of longhouses along the south-western coast should thus be viewed in light of the proximity to the sea-lane, which would facilitate the transportation of large cargoes of local and exotic wares up and down the coast. Individuals traveling this route by boat likely depended on alliance ties with local households, who could restrict or grant progression to travellers, either by permitting entry to safe harbours, or allowing access through protective straits and portages (Prescott, Sand-Eriksen, and Austvoll 2018). Examples of this may be evident at Orre, where the natural harbour ensured safe passage through protective straits, as can also be seen at Hafrsfjord (Fig. 14.3). Intriguingly, not only do both areas hold significant concentrations of Bronze Age longhouses, they also display the largest accumulation of burial mounds and some of the most prestigious bronze artefacts in Norway (Austvoll 2018, 129–30). Thus,
individuals in south-west Norway likely capitalized on their strategic maritime location from the Late Neolithic onwards (e.g. Prescott, Sand-Eriksen, and Austvoll 2018); setting the stage for a new maritime political economy that saw its peak in the EBA.

The ability to organize and control strategic maritime bottlenecks depends on certain groups or individuals’ ability to exert power over others (e.g. Earle and others 2015). This ability is not limited to explicit expressions of power such as the so-called ‘warrior graves’ along the coast. The house was also intrinsically entwined in the maritime political economy and would have served as an important symbol that legitimized power not only internally within a group, but also towards travellers from afar. Thus, the placement of longhouses in south-west Norway not only tells a story of staple economies and everyday activities. The houses likely also served as political nodal points along the south-western sea trade route, where social and political negotiations took place. One could argue that the EBA longhouses convey an outward expression of power used to legitimize the political economy. This argument may be supported by the EBA houses’ size, and also by their placement in the landscape; EBA houses are approx. 1.1 km from the present shoreline, while the LBA distance is 2 km. A strategic part of the political economy was thus plausibly linked to the maritime sphere — materialized in the archaeological record through house structures and burial mounds erected in close proximity to the sea (Fig. 14.3). In contrast, no burial mounds are definitely erected in the LBA in the research area. Burials are instead made without superstructure or are placed along the fringes of older mounds (Nordenborg Myhre 1998, 183; 2004, 86, 102–05). While commemoration may have retained local importance in the LBA, then, whatever political discourse led people to regularly erect new mounds near sea trade routes in the EBA seems to have declined in importance.

Likewise, in the LBA the communicative aspects of the houses seem to fade, both regarding monumental size and landscape placement. Households are likely reorganized, perhaps in response to large-scale changes on the continent, e.g. the collapse of the Aegean city states, changes in trading routes, or environmental changes (e.g. Cline 2014; Kristiansen and Suchowska-Ducke 2015). Even though we are dealing with a smaller sample size, not only is the house size reduced, they also move inland losing the earlier proximity to the sea-lane. From a top-down view, we are thus presented with an overarching pattern which may reveal social and political changes throughout the Bronze Age: a transition from a more hierarchical society in the EBA, to a society that does not have the same desire to express position in the LBA (see also Kristiansen 1978; 2006, 185), whether this is due to the acceptance of the social dominion of some houses over others, or whether they are more oriented towards their local communities than impressing seafaring allies.

Bronze Age people inhabited a large, connected world, a political economy that extended far beyond Scandinavia. The lives of tens of thousands of people were affected as economic, social, and political alternations rippled through these societies at high speed. Following changes in house size, settlement location, and the connection between houses and monumental burial mounds through top-down regional approaches, reveals social dynamics that transcended any one house, place, or community. In addition to taking such large-scale questions seriously in and of themselves, top-down research can problematize questions of power, movement, and production that crosscut social scales, providing vital insights into smaller-scale dynamics as well.

A Bottom-Up View: Lived Space and the Household

The three-aisled house was not only an instrument for power and wealth. It was the main form of architecture and the central medium through which the world was experienced by Bronze Age people. In an effort to explore the sociality of houses from a bottom-up perspective, we focus particularly on the following aspects: house size and hearths, bringing households to life, and artefact deposition.

At this point, we want to pause to critically discuss what we really know about households in the Bronze Age. The term 'household' is simultaneously slippery and essentializing. Concepts of stable, uncontested domestic relations centred around a Western ideal nuclear family are often projected onto the past without critical reflection (e.g. Hendon 2004). However, households are contingent on specific historical and cultural contexts: kinship systems, political organization, settlement patterns, gender constructs, and so on. Households can range from consisting of unrelated persons (Bender 1967), to an entire community (Segalen 1986, 14–17). Yet, the household and kinship structures of the Bronze Age are rarely the objects of critical discourse.

Table 14.2 displays five scholars' takes on the households of the North European Bronze Age. A number of noteworthy points arise from this comparison — the only author that does not assume a nuclear family structure is Sørensen (2010). Artursson (2009, 32, our translation), on the other hand, not
only assumes a one house/one family structure but adds that the family ‘may be regarded as the basic unit of society’. Fokkens (2003, 17) ventures the furthest, assuming not only family-based households, but a ‘natural hierarchy’ where the male elder is head of household, as well as patrilineal and patrilocal kinship structures.

Regarding social stratification, both Kristiansen (2013) and Artursson (2009) apply categories such as ‘chiefly house’, ‘warrior house’, and ‘commoners’, while Artursson suggests that slaves may have been part of the households. Gröhn (2004) likewise assumes that dominant social groups correlate with house size, and interprets the smaller houses of the LBA as expressing that the dominion of certain families has now been accepted. Sørensen (2010) again takes a distinct perspective; apart from variation in size, she observes no social differentiation in the houses she studies. Each scholar’s prior conceptualization of Bronze Age society (family-based or not, slave owning or not) seems to influence the interpretation of the architectural material.

### House Size and Hearth

As noted, top-down approaches often use house size as a proxy for status and rank. While building larger houses may imply strong leadership as argued above, construction can also reflect cooperative and communal action (Brink 2013; DeMarrais 2016). House size, moreover, has further knowledge potential than status and wealth. A first analytical step to populate the longhouses is to explore how many people dwelled together. While an imperfect method, several authors nevertheless identify floor space as a proxy to understanding household size in prehistoric houses (e.g. Cutting 2006; Sørensen 2010).

We conducted two different calculations of household size for the complete longhouses. Myhre’s model (1983), based on Iron Age longhouses in Rogaland and historical analogy, presupposes a byre-dwelling house. It produces very low numbers — average households of six (EBA) and five (LBA), which based on the dispersed settlements and labour required seem unrealistically low. Sørensen’s (2010, 127) adjusted proposal of 10–15 persons per household in south Scandinavia may provide a middle ground. As a parallel, Løken (1998) suggests that large longhouses (125–70 m²) without byres could house 15–25 individuals, while smaller houses (70–90 m²) with byres could house as few as 5–6 people, although without an explanation for the calculation.
Having estimated the size of house communities, we can begin to consider the social practices of houses. The production, preparation, and consumption of food is a rich bundle of domestic social practice. Sharing a meal is a fundamental way to weave individual lives together or distinguish them from one another. Sørensen (2010, 133) suggests that in the Bronze Age, food was consumed directly from the cooking pot at the hearth, a communal practice likely forging affects of community and belonging.

Due to excavation technique and the intensity of current agricultural practice, hearths may be underrepresented in the archaeological record. Nevertheless, twenty-three of the thirty-two house plans in the dataset here include hearths or cooking pits. Intriguingly, three houses possibly included more than one hearth room: Austbo I (c. 150 m²) had cooking pits in both ends of the house, though none of them are dated (Juhl 2001, 76). Håbakken I (c. 106 m²) included both a central hearth in the north-western end and a cooking pit (Fig. 14.4), only the central hearth is dated. Tastarustå II (31 m²) had three oven structures, possibly for bread baking (Armstrong and Kjeldsen 2008, 62–64), implying that this may not have been a regular dwelling.

From a top-down perspective, houses with two hearth rooms have been interpreted to be related to twin rulers and large-scale political-cosmological ideals (Kristiansen 2004). From a bottom-up perspective, however, two hearth rooms convey everyday social interaction and work, or different individuals or groups. As hearths and conjugal households are intimately linked in many cultures (Carsten 2004), it is also possible that two hearth rooms in one house indicate two social groups dwelling within the same house; whether egalitarian, asymmetrical, or polygamous (cf. Eriksen 2019, 57–58).

**Bringing Households to Life**

Can we, then, take for granted that the nuclear family was the basis of the Bronze Age household, as the majority of scholars in Table 14.2 do? The house one dwelled within, and belonged to, was a nexus of social organization and affinity within networked landscapes. The dispersed settlement pattern likely influenced the structure of the household. Although ethnographic examples of single-gendered households are known (den Uyl 2001), they occur in villages where visiting sexual partners is relatively easy. The dispersed settlement of Bronze Age Rogaland suggests structuring around one or more reproductive couples. However, this does not automatically mean a nuclear family matching Western modernity. Perhaps the Bronze Age households were more akin to those of the Iroquoian longhouses (Creese 2012), where several families nested into one complex household under one roof, and where persons were constituted partly as autonomous individuals, partly as embedded in the larger wholes of lineage and house.

The social contract between humans and animals may have altered with the introduction of the three-aisled house. As noted above, the significance of cattle has been suggested as one of the driving forces of the innovation of the three-aisled longhouse. However, the significance of animals is unclear and contested (Table 14.2). In our material, nine longhouses provide possible evidence for animal husbandry; four from the EBA and five from the LBA. Phosphate analyses of Tjora 4, on the other hand, showed that no animals lived within the house (Fyllingen and Armstrong Oma 2010). On two EBA sites where faunal analyses have been executed, cattle never appear — sheep/goat and pigs dominate. Indeed, Armstrong Oma (2018, 93) argues that the EBA three-aisled houses in Rogaland did not necessarily house cattle at all; she sees the entire transition from two- to three-aisled construction to be the consequence of sheep becoming household members.

Finally, the decrease in house size may confirm that households are reorganized between the Early and Late Bronze Age. Several scholars see the stabilization of smaller houses as reflecting the accepted dominion of an elite over a class of commoners (cf. Table 14.2). If so, LBA Rogaland displays only the ‘common’ and none of the elite houses that would make up such a system. From a bottom-up perspective, the assumed social stratification among and within houses requires critical reflection. Applying concepts such as ‘chief’ and ‘commoner’ seems problematic based on the evidence; for instance, the artefact assemblages between the larger and smaller houses are similar. Moreover, it is highly problematic to assume power relations based on a ‘natural hierarchy’. A detailed interpretation of political structures, power, class, and gender needs to be better supported by evidence to make claims about specific social stratification in the house material. This seems a vital task for future research.

Bringing these discussions together, then, we can start rendering a more vivid picture of life in the Bronze Age. The inhabitants of the Bronze Age longhouses — perhaps closer to 12–15 persons in the EBA and 8–10 in the LBA — likely included diverse social actors. Instead of expecting monolithic ‘nuclear families’, static across time and space,
Table 14.3. Overview of possible and likely intentional artefact deposits from our thirty-two houses.

<table>
<thead>
<tr>
<th>House</th>
<th>Artefact</th>
<th>Spatial context</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EBA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myklebust VIII</td>
<td>Quernstones</td>
<td>Wall/entrance</td>
<td>Dahl 2014, 53</td>
</tr>
<tr>
<td>Nordre Tengesdal 3</td>
<td>Ceramic shards</td>
<td>Doorways, three of four doorposts</td>
<td>Reisersen 2015, 24, 45–46</td>
</tr>
<tr>
<td>&quot;</td>
<td>'Large amount' of grains</td>
<td>Posthole</td>
<td>Reiersen 2015, 65</td>
</tr>
<tr>
<td>Austbø II</td>
<td>Min. 2891 grains (+ 'half of the samples not counted yet')</td>
<td>5 roof-supporting postholes, half in one posthole</td>
<td>Juhl 2001, 76</td>
</tr>
<tr>
<td>Sandved (Skeiane) 1</td>
<td>Organic vessel with decorated ceramics, quernstone</td>
<td>Pit connected to the wall</td>
<td>Pilskog 1998</td>
</tr>
<tr>
<td>Myklebust XV</td>
<td>Quernstones</td>
<td>Doorway</td>
<td>Dahl 2014</td>
</tr>
<tr>
<td>Tjora 4</td>
<td>Quernstone</td>
<td>Eastern longwall</td>
<td>Fyllingen 2015, 73</td>
</tr>
<tr>
<td><strong>LBA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orstad (Håbakken) 1</td>
<td>Phallic figurine</td>
<td>Pit directly outside house</td>
<td>Hemdorff 1987</td>
</tr>
<tr>
<td>Orstad (Håbakken) 2</td>
<td>Ceramic vessel ('rare vessel type')</td>
<td>Doorway, post of internal door</td>
<td>&quot;</td>
</tr>
<tr>
<td>Kleppevarden 1</td>
<td>Two ceramic vessels ('rare vessel type, same as Håbakken')</td>
<td>Pit directly outside house</td>
<td>Dahl 2007, 41</td>
</tr>
<tr>
<td>Berge 10</td>
<td>Flint scraper</td>
<td>Posthole, roof-supporting</td>
<td>Dahl and others 2017</td>
</tr>
<tr>
<td>Skadberg 3</td>
<td>17 quartz nodes</td>
<td>Doorway, paved entrance</td>
<td>Bjørlo 2011</td>
</tr>
<tr>
<td>Skadberg 3</td>
<td>33 quartz nodes</td>
<td>Walls</td>
<td>Bjørlo 2011</td>
</tr>
<tr>
<td>&quot;</td>
<td>Ceramic vessel</td>
<td>Posthole, wallpost</td>
<td>Bjørlo 2011</td>
</tr>
<tr>
<td>Skeie XX</td>
<td>Iron plates — ‘possible sword blade’ (?)</td>
<td>Hearth</td>
<td>Skare 1998, 22</td>
</tr>
</tbody>
</table>

Figure 14.4. Orstad (Håbakken) I, with its two depositions: a rare ceramic vessel in a doorpost, and a clay phallic figurine in a (cooking?) pit by the wall. The west end of the house was later covered by a burial mound (circle) (figure by Marianne Hem Eriksen, based on Hemdorff 1987, 230 and photos by Terje Tveit).
we should expect complexity and diversity within and between households. Social roles are of course neither static nor essential and will, for instance, have altered over the life cycle. Based on studies of dress, several different female-gendered social roles have been suggested (Sørensen 1997; Bergerbrant 2007). Contemporary EBA burials from Rogaland contain abundant female dress accessories, especially in Period II, including artefacts such as tutuli, belt plates, neck collars, arm rings, and brooches (e.g. Nordenborg Myhre 1998). Perhaps ritual specialists in corded skirts, as the woman from Rege (see Armstrong Oma, this volume), would occasionally appear within the houses. The household would also produce different male roles, in some houses perhaps men with weapons striving toward a specific male ideal, exuding potency, violence, and sexual force. EBA burials from Rogaland display such a warrior ideal through grave goods like toiletry kits and swords (Austvoll 2017). How these body-practices played out in the settlement is, however, unknown; and moreover, the majority of men may not have had the opportunity or inclination to strive towards this social ideal.

We know little of the childscapes of prehistory, and most children did not receive a form of burial that we can recognize in the archaeological record (Bergerbrant 2014). Yet, the disparate households of the longhouses must have housed a number of children. We should also expect occasional craftspersons in the household, perhaps herdsmen or itinerant metal or woodworkers (e.g. Sörman 2018). Lastly, some houses clearly included animals as members of the household — although more rigorous research is needed to understand the role of animals in the three-aisled longhouse.

**Artefact Deposition**

Finally, artefact assemblages, particularly the intentional deposition of objects within the house, can situate longhouses as loci of social and ritual practices of placemaking. Six of the fourteen EBA houses and six of the eighteen LBA houses contain possible or likely intentionally deposited artefacts.

Intentional artefact deposition within hearths, postholes, wall-ditches, and pits is a recurring practice from the Bronze Age to the Viking Age (Valum 2011; Eriksen 2019), and has been interpreted as apotropaic or fertility-inducing ‘house offerings’ (Carlie 2004). While deposited artefacts may be apotropaic or invoke prosperity, we argue the reason they can do this work lies in their relationships with the inhabitants and with the house. A ceramic vessel placed in a posthole may express and reference the cohesion of the household sharing meals, or the essence of the maker/owner of the vessel. It may be an heirloom evoking an ancestor, or it may come from another house, forging relational links between different houses across time and space.

Deposited artefacts in this dataset include, among others, 1500 grains in one posthole, intentionally broken ceramics, a phallic figurine (Fig. 14.4), and forty-nine quartz nodes in one house (Table 14.3). Intriguingly, two LBA sites both have depositions of a rare ceramic vessel type (‘tappøret kar’) which is otherwise found only in a smaller region of Jutland (Dahl 2007), perhaps forging relationships with houses across the ocean. The artefacts used in depositional practice thus materialize every day and ritual life in the longhouse: food practices through ceramic vessels, the role of sexual imagery, and links to other people and places. The phallic figurine and a possible sword blade are particularly intriguing, as they may have been part of the conceptual world of the phallic men of the Nordic Bronze Age rock art, expressing an ideological package permeating Bronze Age ritual and domestic life. Depositing more than 3000 grains in postholes upon building a house is likewise an economic and ritual choice. After planting, tending, harvesting, and processing grain, it was meaningful to the inhabitants to embed their crops within the structure of the house (cf. Løken 1998).

Ultimately, deposition is interwoven with the life cycles and life projects of people and their houses.
Examining deposition from a bottom-up perspective brings out rich stories of lived experience in the Bronze Age. It brings us closer to singular actions and individuals of the past, who collected particular artefacts and placed them with care, in post-holes, by the hearths, in pits (Fig. 14.5) — perhaps in the hope of a better future for their house, marking time passing and cycles of life within their long-house lifeworlds.

Bridging Large-scale and Small-scale Perspectives: Some Concluding Thoughts

How do the two approaches we have taken in this chapter work in concert? Where do we arrive at, when we see houses as markers of political economy, instruments of trade and power, and simultaneously as lived spaces of foodways, social encounters, and ritual? In many ways, the perspectives taken here complement one another. Top-down and bottom-up approaches to some extent work on different analytical scales. Both approaches have legitimate claims of being evidence based; top-down approaches are often quantitatively rigorous and based on cross-cultural models, whereas bottom-up studies make good use of empirical details that would perhaps be overlooked in more generalizing studies. In these respects, they work well together to paint a richer picture of prehistoric lifeways.

In other ways, these approaches are rather incommensurable. To approach houses from such different perspectives also means confronting the assumptions we bring to bear on the data. Top-down approaches have a tendency to reduce most action to subsistence, dominion, and power. However, the place where people live is not only a place of rational-economic labour — it is a home. Bottom-up approaches serve as an important counterpart in that respect, as they enable us to ask different questions. Yet, their tendency to focus on idiosyncrasies creates a frame of reference where it is difficult to see the forest for the trees. Their often locally oriented focus also makes cross-cultural comparison difficult, which is often hailed by top-down researchers to be one of the primary strengths of archaeology as a discipline.

Crucially, both approaches have shown that houses are not trivial spaces — they are inextricably interwoven with the social, economic, political, and ritual structures of a given society. For instance, the change in house location from the EBA to LBA indicates a shift in the relationship to the seascape and, likely, the expression of maritime control. However, it is arguably not enough to see houses as indices of power, wealth, and politics. To understand political and social structure, we argue for the need to look inside the houses, to the everyday practices and performances taking place there. Houses are the spaces where fundamental day-to-day experiences take place: sharing meals, food processing, rearing children, ritual activities, storytelling, births, deaths, and conflicts. These basic acts produce and reproduce the social and political system, which we in turn see played out on the larger scale.

Thus, the household is a bearer of both embodied meaning and projected power. The house may have expressed power and wealth, which may have helped individuals consolidate power, alliance, and kinship ties, but as a social entity the house also constituted people’s lifeworlds and life works — spaces they pivoted throughout their lives, engaging in placemaking practices, social negotiation, and ritual. The most crucial conclusion we draw from this exploration of a set of longhouses from Rogaland, is that there is still an enormous potential in the study of houses in prehistory. By acknowledging the potential in merging top-down and bottom-up approaches, we argue that vital new insights into Bronze Age society can be generated through house remains, which are still an underutilized knowledge base for social studies of the deep past.

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PART III

Encounters: Identity, Things, and People on the Move
15. A Safe Harbour

Identifying and Theorizing Harbours in Late Neolithic and Bronze Age Norway

Introduction: The Origins of the Institutions of the Bronze Age

In recent years, the transition to the Late Neolithic (LN) period around 2350 BCE in Norway has been the subject of much new research. Christopher Prescott (2012b, 227) is among those who argue most forcefully for considering the LN not as ‘the final blooming of the Neolithic, but the initiation of Bronze Age (BA) societies in Scandinavia’. Prescott (2012b, 227) states:

With the transition to the LN I there is not only a break with the heterogeneous traditions and social orders of the preceding Neolithic periods; a new trajectory is established. Though most structural changes that manifest themselves in the LN, BA and pre-Roman Iron Age otherwise in Scandinavia are also found in coastal and southern Norway, perhaps as far as northern Troms, there is also a fundamental structural and historical continuity from the LN I to the mid-pre-Roman Iron Age here as elsewhere in Scandinavia (Prescott 2005, 132–33). In this respect we can identify historical roots of institutions that evolve around the LN transition and dominate history into the Iron Age, and indeed beyond.

Prescott and others think that many of the cultural changes taking place in the LN were triggered by the presence of people with a material culture, an ideology, and social structures associated with the southern Scandinavian variety of the Bell Beaker Culture (e.g. Prieto-Martinéz 2008; Prescott 2009; Prescott 2012a; Prescott and Glørstad 2015). A main tenet of this hypothesis is that migration from southern Scandinavia to Norway, as well as ships and seafaring technology, played a crucial role in the spread of this culture. This is based on the fact that flint daggers and other objects associated with the BBC, as well as south Scandinavian farming and ritual practices, are found all along the Norwegian coast (e.g. Marstrander 1950; Holberg 2000; Apel 2001; Valen 2007; Østmo 2008; 2012; Kilhavn 2013; Sand-Eriksen 2015; Austvoll In Press).

Whether or not one accepts what could be labelled ‘the Bell Beaker hypothesis’ for cultural change in the Norwegian LN (see e.g. Bergsvik and Olsen 2003; Nyland 2006; T. Olsen 2009; A. Olsen 2009, 2012; Anfinset 2017 for perspectives that emphasize the importance of local developments) or, like Vandkilde (2009) one questions whether or not it is fruitful to regard the Bell Beaker Culture as the beginning of the BA in Scandinavia, it is clear that major changes did happen, and that, as Prescott (2012c) points out, new and long lasting social institutions were established. It seems likely that the Bell Beaker Culture played a part in this, possibly through processes that involved both migration and other forms of cultural transmission (cf. Olalde and others 2018), but this is not a necessary premise of the following discussion.

The Harbour as a Social Institution

This chapter will instead focus on the origins of what is considered to be one of those long-lasting institutions that Prescott talks about in the quotation above; the institution of the harbour. This will be investigated through three case studies (Fig. 15.1). Briefly put, it is argued that the replacement of the predominantly shore-bound settlement pattern of the Middle Neolithic in the coastal areas of southern Norway, with a predominantly inland agricultural settlement pattern in the LN, often resulted in the physical separation of settlement and harbour, and that this led to the development of the harbour as an independent social institution.
Social institutions are here defined in a broad sense, as what Giddens (1984, 24) calls ‘the more enduring features of social life’. Institutions may, as Kristiansen and Larsson (2005, 11) point out, be traced archaeologically because they ‘materialise in specific and recurring ways that allow one to infer their cultural and historical formation and transmission in time and space’. The institution of the harbour seems to have had certain structural properties that helped facilitate the spread of new technologies and ideas in the LN. Once these were established, it also contributed to the consolidation of the new cultural situation, laying one of the foundations of what was to become the social structures and institutions of the Bronze Age.

**Changing Settlement Patterns in the Late Neolithic**

A central premise for this hypothesis is the major change in settlement patterns that can be observed in the Late Neolithic. Numerous studies have shown that the majority of settlements in the periods preceding the LN were shore-bound (e.g. Østmo 1988; Mikkelsen 1989; Reitan 2005; Kilhavn 2013; Solheim and Persson 2018). The predominantly marine economy required settlements near naturally sheltered harbours for boats (e.g. Bjerck 1989). Studies criticizing archaeological surveying methods and excavation methods, and a narrowed focus on shore-bound settlements, have nuanced this picture some, though not substantially (e.g. Berg-Hansen 2009; Reitan, Sundström, and Stokke 2018, 564).

In the LN the settlement pattern changed radically. Only a few longhouses of LN farms have actually been excavated (Prescott 2012b, 221, table 12.4; Prosch-Danielsen, Prescott, and Holst 2018, 76, table 1), but, as Glørstad (2012, 88–89) points out, it is the near disappearance of shore-bound sites in the LN, combined with a marked inland distribution of LN stray finds and unambiguous signs of agriculture in the pollen record, that indicate that farming became the primary subsistence strategy in the LN (see also Glørstad 2004, 79). Why people chose to adopt this new way of life will not be discussed, instead this chapter will explore some of the consequences the new settlement pattern had for the social geography of the coastal communities.

**Structural Properties of Front and Back Regions**

In the settlement pattern that preceded the LN, dwellings usually were situated very close to the shore. Every settlement must also have been a ‘harbour’, in the sense that this was where boats were regularly pulled ashore, and probably also built and maintained (Bjerck 2017). In settlements of this kind there must have been very little opportunity to separate what Giddens (1984, 122–29), inspired by Goffman (1956), has termed ‘front and back regions’, or areas of disclosure and enclosure. Social agents use these regions for different activities and purposes. Front regions are ‘public’ spaces, spaces where actions are displayed. Back regions may be characterized as more ‘private’ spaces, where actions may be hidden from others.

Consider a typical shore-bound settlement around 2350 BCE in Southern Norway. What kind of regionalization of actions would be found? Most actions were probably ‘public’, taking place outdoors. There has been some discussion about the possibility of tracing different zones of activities which may be interpreted in terms of a gendered division of labour, or activities taking place indoors/outdoors, but in the Norwegian context, where the preservation of any
traces of dwelling structures on shore-bound sites is rare, this is a very difficult task (e.g. Glørstad 1997; Nærøy 2000). Of greater interest here is a coarse separation of the actions potentially viewed by everyone, and those only viewed by a select group of people. Even if dwellings have provided some possibility of withdrawal, the only way to make a true back region was probably to physically move away, out of sight of the settlement.

The settlement itself, being the place where people pulled their boats ashore, would inevitably be the front region par excellence, being both the façade of the land against the sea, and of the people of the settlement against people from other places. People arriving by sea would probably very soon get an impression of the whole settlement and its activities, and for the local people there would be little opportunity of ‘hiding’ anything from the newcomers, if they wished to do so.

The Origin of the Harbour as a Social Institution

One of the important unintended consequences of the establishment of agricultural settlements in the Norwegian coastal areas in the Late Neolithic may have been the separation (in most cases) of the harbour from the settlement. Whilst still leaving the harbour as a front region, this also allowed the configuration of the settlement as a potential back region, enabling both harbours and settlements to develop distinct structural properties. This may, in the Norwegian context, be considered as the origin of the harbour as a social institution.

A consequence of this new pattern of settlement and mobility may have been that harbours began to acquire more specialized front region functions, as the social façade of a local community against the outside world. If we agree with Giddens (1984, 31) that structural properties of signification, domination, and legitimation are always present in social institutions, we should expect to find material expressions of how communities wanted to appear to others, of identity, and of ownership and control of land and sea in connection with the maritime front region in general, and perhaps with harbours in particular.

Another consequence may have been that it became easier to control and differentiate access to settlements. There could be several reasons for people wanting to do so. For one thing, this would certainly make it easier to defend the settlement against enemies arriving by sea. That the LN saw the beginning of a ‘warrior ideology’ culminating in the BA, expressed e.g. in archery burials and monumental burials in stone cists with flint daggers and shaft hole battle axes, seems plausible (e.g. Sarauw 2007; 2008; Østmo 2011; Salanova 2016). In such a society it is difficult to imagine that people moved about quite freely. When travelling by sea along the coast of Southern Norway, people navigated through both a physical and social maritime landscape, the one no less important than the other, and you would probably be wise to stick to the harbours where you knew you were welcome (cf. Kvalø 2007). You would certainly not try to approach a settlement where you were not sure if you were welcome, without doing it in a socially acceptable and conventional way. In this situation, harbours may have developed a front region function as a ritualized meeting place, where ‘safe’ meetings could take place.

How can we Identify Late Neolithic and Bronze Age Harbours Archaeologically?

If one accepts the argument above, the next step is to ask how we may identify LN/BA harbours archaeologically. How, exactly, does this institution ‘materialise in specific and recurring ways’ (Kristiansen and Larsson 2005, 11)? What are the social-material characteristics of the harbour? The only objects that almost exclusively would be found in a harbour context are perhaps the boats themselves, with boathouses for the more sizeable harbours. However, the only remains of a BA boat known from Norway was discovered in a bog at Senja, at some distance from the shore (Wickler 2019). Furthermore, to my knowledge, no construction that has been interpreted as a boathouse has ever been found in a Scandinavian LN/BA context.

We should perhaps be more optimistic about the possibility of finding a boathouse than the boat itself. The Hjortspring boat (c. 350 BCE), which is often considered to be of a type that goes back to the BA, and perhaps even the LN, was 18–19 m long, with the replica Tilia Alsie weighing in at about 500 kg (Crumlin-Pedersen 2003). With a large enough crew, such a boat could of course easily be carried from the shore to the settlement after use, though having a boathouse would nonetheless have been convenient.

Other possible objects that could occur in harbours are tools used for building and maintaining boats. The problem here is, of course, that we do not know what tools were used, and those that we can have a plausible guess at, like shaft hole axes and flint axes (and, eventually, bronze axes), were evidently used in many other contexts as well. We have the same problem when we turn to finds that...
are often interpreted as an expression of those maritime front region functions mentioned above, of the public display of identity, domination, and legitimation, of ritual behaviour, and of meeting places. Typical examples would be monumental burials, like the many cairns along the Norwegian coast, rock art, and objects that seem to have been subject to ritual behaviour. Large numbers of earth ovens at a site is often interpreted as an indication of a meeting place (e.g. Diinhoff 2005, 137; Gustafson 2005, 114–15). All these social-material expressions could well be encountered in connection with harbours, but frequently also in other contexts.

In their study of BA institutions, Kristiansen and Larsson (2005, 11–12) propose an ‘intercontextual’ strategy of interpretation, where one first identifies the relation of contexts via one or several symbol(s), and then the relations of these symbols in a specific context. If we substitute ‘symbol’ with ‘object’, this may work as a method with which to study the institution of the harbour as well. The contexts in this case would be sites along the coast that both appear to be suitable harbours (from a topographical and functionalist point of view), at some distance from arable land, and which also have LN/BA finds. This is how Prescott and Glørstad (2015, 80) interpret the Slettabø site as a ‘Bell Beaker harbour’. To do this systematically is, of course, no small undertaking. However, a few examples will be given to illustrate what may be learnt from this approach.

First, I will try to identify some of the tools that may have been used for shipbuilding. Østmo (2008, 67–68) suggests that LN low-flanged copper axes may have been tools for producing planks for such vessels. Very few such axes have been found in Norway (Melheim 2012, 57–60). It is noticeable however, that of the ten finds listed by Melheim (2012, 461), seven of them have been found in possible harbours (Table 15.1). In addition, the axes from Gullerud in Buskerud (C13875), Berge in Telemark (C7978), and the hoard with two axes from Steine in Sogn og Fjordane (B3295) were found not far from inland lakes, but further away from the bank of the lake than the axes listed in the table above. I suggest that the strong correlation between finds of these axes and possible harbour localities strengthens the hypothesis of these axes being used as tools for shipbuilding. With the metal axes numbering very few, we should perhaps also look for other possible tools

<table>
<thead>
<tr>
<th>Acc. No.</th>
<th>Place</th>
<th>County</th>
<th>Possible harbour context</th>
<th>Type of find</th>
</tr>
</thead>
<tbody>
<tr>
<td>C11059</td>
<td>Borge</td>
<td>Østfold</td>
<td>The east bank of the Seute River, which was part of a narrow fjord in the LN/BA.</td>
<td>Stray find</td>
</tr>
<tr>
<td>C35254</td>
<td>Rolighet</td>
<td>Vestfold</td>
<td>The east bank of a bend in the Lågen River, which was part of the Larvik fjord in the LN/BA.</td>
<td>Stray find</td>
</tr>
<tr>
<td>S7825</td>
<td>Bersagel</td>
<td>Rogaland</td>
<td>North of Ersvik in the Høgsfjord, in a sheltered bay.</td>
<td>Possible burial (cairn)</td>
</tr>
<tr>
<td>B4191</td>
<td>Håheim</td>
<td>Sogn og Fjordane</td>
<td>The east bank of lake Oldenvatnet.</td>
<td>Possible hoard (big rock)</td>
</tr>
<tr>
<td>B7952</td>
<td>Kvåle</td>
<td>Sogn og Fjordane</td>
<td>The north bank of the Songdalselva River, and close to a bay in the Sognefjord.</td>
<td>Stray find</td>
</tr>
<tr>
<td>B12125, B13373</td>
<td>Blindheim</td>
<td>Møre og Romsdal</td>
<td>The bay of Blindheimsvågen in the Borgundfjord.</td>
<td>Hoard (BA) (big rock?)</td>
</tr>
<tr>
<td>T7852</td>
<td>Fævåg</td>
<td>Sør-Trøndelag</td>
<td>South of Fævåg in the Stjørnfjord, in a sheltered bay.</td>
<td>Possible hoard (bog)</td>
</tr>
</tbody>
</table>

Table 15.1. Low-flanged copper axes found in harbour contexts.

If LN/BA ships were constructed like the Senja and Hjortspring boats, they were plank-built vessels. Østmo (2008, 67–68) proposes that LN low-flanged copper axes may have been tools for producing planks for such vessels. Very few such axes have been found in Norway (Melheim 2012, 57–60). It is noticeable however, that of the ten finds listed by Melheim (2012, 461), seven of them have been found in possible harbours (Table 15.1).

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1 Object and context information can be found in the national database unimus.no.
used in the production of planks. Flint axes are probably the best candidates, especially the broad bladed flint axes with a rectangular cross-section, which seem to emulate metal axes (e.g. Forssander 1936, 132; Glob 1952, 127; Hinsch 1956, 137; Østmo 1988, 82–83; Mikkelsen 1989, 231). It has not been possible to find examples of the experimental use of such axes, but their wedge-like shape makes it plausible that they would be well suited for making planks.

A search with the terms ‘broad bladed’, ‘flint’, and ‘axe’ in the Norwegian national archaeological artefact database UNIMUS, returns 151 objects. I have not had the opportunity to examine all these axes in detail, and most of the axes are stray finds, with little information about the exact location of the findspot. We may, however, get a rough impression of the distribution of the axes by counting how many that have been found in coastal and inland municipalities, respectively. This count shows that 116 axes (79%) have been found near the coast, and thirty-one (21%) have been found inland. There are noticeable concentrations of axes at Jæren in Rogaland (thirty-six axes), around the estuaries of the major rivers Lågen in Vestfold (eleven axes), and at Glomma in Østfold (eleven axes).

A Case Study from Arendal

A closer look at two axes from Arendal, Aust-Agder, where we do know the exact findspots, may serve as an illustration of how some of these axes come from very plausible harbour contexts. The map (Fig. 15.2) shows the area around the Tromøy island, with the sea level raised to the LN level, 10 m above the present sea level (Romundset 2018, 475). The first axe (C32038) was found near Neskilen, on the mainland. The other (C30452) was found north of Bottsfjorden on the island of Tromøy. Circles with a 1 km radius have been drawn around the findspots, and the other known LN/BA finds within this area have also been plotted. The hashed areas indicate arable land.

Both of the axes come from very suitable harbours (from a topographical and functionalist point of view), in bays sheltered from the prevailing southerly winds. From the axe in Neskilen there is about 400 m to the nearest patch of arable land. This axe thus seems to have a stronger geographical connection to the harbour at the bottom of the bay than to farmland. The axe from Tromøy was similarly found in the bottom of a small bay, but also near

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settlement likely, although some adjacent areas may have been used as farmland or as pasture by nearby farms. Instead, the broad-bladed flint axes may indicate that boats were built or maintained in the harbours. The flint dagger, arrowheads, and the shaft hole axe are typical objects found in LN burials and may come from destroyed graves. Thus, the LN maritime front region in the bay of Bottsfjorden would seem to exhibit some social-material expressions of those front region functions mentioned above.

A Case Study from Lista

Another example of Late Neolithic ritual behaviour in the maritime front region comes from Lista, Vest-Agder. At the start of the LN, the sea level at Lista was about 5 m above the present sea level (Pusch-Danielsen 1997, 98). Most of the south-western part of the peninsula was submerged, forming a large bay (Fig. 15.3). About 500 m north-west of the innermost part of this bay, in a gently sloping terrain facing the shore, some LN objects were discovered in 1919 during the excavation of a Roman Iron Age burial mound on the farm Vestre Hauge (Gjessing 1920, 107–23). Beside a large boulder, a layer of white sand had been spread out (Fig. 15.4). On top of this, a type C Westland-adze, two thick butted flint axes, one bifacial flint axe, and a spoon-shaped scraper had been carefully placed, side by side (C22437). The objects were mingled with charcoal and burned bones, and a layer of burned stones covered the objects. Closer to the edge of the mound another Westland-adze, a flint scraper, a couple of borers, and some flakes were also found. The excavator interpreted this as a burial (Gjessing 1920, 123). The deposition is hard to categorize, but that it represents some kind of ritual behaviour seems beyond doubt.

The objects point to an early LN date, the type C Westland-adzes generally being dated to the Middle Neolithic (MN), and possibly the early LN (Bakka and Kaland 1971, 8; Gjerland 1985, 18; Næroy 1993, 77–87; Aksdal 1996, 26; Bergsvik 2006, 40), the thick butted flint axes dated to the Middle Neolithic B (Malmer 1962, 339–529), while the bifacial flint axe and the spoon-shaped scraper do not appear until the LN, the last being of southern Scandinavian origin (Glob 1952, 67; Bakka and Kaland 1971). Another deposition by a large rock, with type I flint-daggers (Lomborg 1973), is known from Skeibrok, less than a kilometre away, and similar LN finds by large boulders, and sometimes surrounded by stone settings, have been found along the coast as far north as the Vefsn fjord in Nordland (Holberg 2000, 61; Kilhavn 2013, 49–52). The artefacts discovered in Vefsn consist of both an early flint dagger and a slate arrowhead of the local tradition (Gjessing 1945, 434). The discovery from Vestre Hauge may thus not be a singular occurrence, but a representative of a certain type of ritual behaviour associated with the spread of the southern Scandinavian material culture along the coast of Norway in the LN.

It even seems possible that the odd mix of old and new, ‘indigenous’ and ‘exotic’ objects represents some kind of material expression of contact between south Scandinavian migrants and local people in the very first part of the LN, if we accept that such migration may have happened. It is also worth noticing that although it is probably of a younger date than the find from Vestre Hauge, the rock carving sites Vestre Hauge II, Kalleberg I, and Langeland II near Vestre Hauge display some of the very earliest typologically dated rock carved ship figures in Norway (Carrasco 2009, 49). Thus, rock art is clearly also a feature of the maritime front region at Lista, as it is known to be in several other areas (e.g. Ling 2008).
A Case Study from the Oslo Fjord

The last example comes from Sandspollen, a harbour on the western side of the Drobaksund, in a narrow part of the Oslo fjord. The two maps (Figs 15.5 and 15.6) show the changes in landscape and settlement around the harbour from the Early Neolithic (EN) to the LN/BA. The EN/MN sites are found on the mainland, located on the sloping beach sheltered by the great moraine ridge, but also on the very exposed islets to the north. The sites that are marked as ‘settlement/activity areas’ on the map do not contain many finds, just a few blades and flakes each, except for a somewhat larger site close to the moraine ridge.

Sometime in the MN, isostatic uplift led to dry land appearing between the moraine ridge and the nearest islet and a very sheltered harbour was formed. In the LN no sites are found on islets or the exposed parts of the coast — instead, the finds cluster at the bottom of the bay. Here, the handle of a type III F flint dagger is reported to have been found together with three pressure flaked arrowheads (Lomborg 1973; C7875-C7879). Not far away a large piece of flint, partially knapped, and most probably a preform of a dagger or an axe was found (C60456). In the inner part of the bay, a large cluster of at least 150 earth ovens has been partially excavated, but unfortunately no $^{14}$C dates have been published (Aannestad 2000). Some morphologically very similar earth
The really striking difference between the LN and the preceding periods becomes apparent when we also consider finds and sites from the inland area around the harbour. Here, just a single object that may be dated to the EN or MN has been found — the fragment of a polished flint axe. Apart from two Mesolithic stone axes, the inland area is also empty of Mesolithic finds. By contrast, as many as seventy shore-bound sites dating from the Middle Mesolithic to the MN have been found in the area west of Sandspollen (not shown on the map) (Grindkåsa 2008).

The only certain LN/EBA finds from the inland area are an earth oven, which is 14C dated to 2490–2390 BCE (ID 99985), and an excellently crafted pressure flaked flint spear. However, they are both firmly situated in the agricultural landscape, where pollen diagrams from bogs about 1 km west of the moraine indicate pastoralism in the LN/BA (Høeg 1999, 271–72). By contrast, the graves of the LN/EBA were built by the shore. A cairn, and a simple shaft hole axe from what appears to be a destroyed cairn close by, have been found close to the shore on the south side of the moraine ridge, overlooking the fjord and the harbour (ID 136529, ID 10160, not shown on the map). The flint dagger and arrowheads may also come from a burial. Considering that at Verket, a few kilometres to the west of Sandspollen, a couple of LN stone cists which contained very similar objects were built directly by the shore, in front of a similar moraine ridge, this may also be a reasonable interpretation of the finds from Sandspollen as well (Østmo 2011, 108). During the LN, the settlement probably moved inland to the fertile soil on the top of the moraine ridge, as indicated by the presence there of the earth oven, the flint spear, and the pollen evidence. Indeed, in order to practice farming for subsistence, the settlement probably had to move, since the available farmland by the harbour was very limited at that time.

Thus, the harbour and surrounding coastline seem to have become a more specialized front region in the LN/BA, when the settlement moved inland to the arable areas, transitioning into a place of monumental burials, and possibly also a meeting place for larger numbers of people. In this context it is also tempting to interpret the large flint dagger/axe preform, which clearly is of southern Scandinavian origin, as an object of trade between locals and visitors in the harbour.

Discussion

The role of travelling in search of knowledge and prestige has been a major topic of much Bronze Age research (e.g. Kristiansen and Larsson 2005). This research tends to focus on long distance travel, and to argue that this is something characterizing the BA in contrast to the LN (Ling and Cornell 2017, 18). However, several authors have also suggested that in the Norwegian context, elite control over maritime communication routes and ‘bottlenecks’ in the waterways was crucial for the political geography in the BA, even to the point of characterizing the political organization in this area as ‘maritime chiefdoms’ (Prosch-Danielsen, Prescott, and Holst 2018, 194). Austvoll (2020) argues that this socio-political strategy of maritime control seems to originate in the LN.

By considering the harbour as a social institution which developed specialized front region functions, as a consequence of the change in settlement pattern during the transition to the LN, we may better understand both the establishment, expansion, and consolidation of this new political organization and its associated material culture.

Harbours — Between Trust and Risk

In the phase of establishment, i.e. the very first part of the Late Neolithic, communities along the coast abandoned many old traditions, and accepted several new ideas and technologies. This would necessarily involve both trust-making and risk-taking on a massive scale. In traditional societies kinship relations, the local community, religious cosmologies, and tradition may be regarded as the principal components of the creation of an environment of trust (Giddens 1991, 102). Breaking with any of these, be it caused by migration, the invention or learning of a new skill or technology, or a change of lifestyle or cosmology, always implies an element of risk.

In the context of the radical change in the settlement pattern from shore-bound settlements to farms, harbours may be regarded as central places for both trust-making and risk-taking in the LN. On an individual level, basic trust between persons is made and maintained (or possibly broken) through evaluation of others in face-to-face interaction. But, as Giddens (1991, 83–88) has shown in his discussion of modernity, the story of modernity is to a large degree the story of people increasingly trusting abstract systems of knowledge and expertise, through what he calls ‘faceless commitments’.
Such systems do, of course, also exist earlier, albeit on a smaller scale. In the context of LN Norway, the new ideas and technologies of south Scandinavian origin could be viewed as abstract systems of knowledge and expertise, involving such diverse skills as farming, bifacial pressure flake technology, metalworking, shipbuilding, and probably a rich variety of religious skills (e.g. van de Noort 2012, 73–74; Ling and Cornell 2017, 30).

The point is that in order for these new systems of knowledge to expand fast — Prescott (2012c, 212) suggests in the course of a generation — and over such a wide area, they must, at some point or another, have become trusted. To borrow another term from Giddens (1991, 88), a point of connection between lay individuals or collectivities, and the representatives/experts of systems of knowledge, may be called an ‘access’ point. By being an arena for face-to-face interaction, such points are both places of vulnerability and risk for systems of knowledge, but also junctions at which trust can be made and maintained. Precisely for that reason, access points are usually clearly structured into front and back regions (Giddens 1991, 86). Considering this, harbours may have been central institutions for the creation of access points, and, consequently, central arenas for the spread and expansion of south Scandinavian ideas and technologies in LN Norway.

Nyland (2016) argues that the spread of one of these technologies, the bifacial pressure flake technology, was a process characterized by ‘cultural hybridization’, giving examples of objects made with this technology from local raw materials like quartzite. This, she argues, may represent contact between Bell Beaker groups and indigenous groups, where the newcomers acquired knowledge from the locals about local sources of lithic raw materials. Many of these quarries are found inland, and Nyland (2016, 131) suggests that the quarries themselves may have been important meeting places and arenas for exchange of technological and cultural knowledge.

This seems very plausible, but it might also be argued that the ‘first encounters’, and the first and basic building of trust between outsiders and locals probably usually happened in the harbours of the first agricultural settlements. This relates both to the coast being the major route of communication and the most densely settled area, but also that harbours, because of their structural properties discussed above, were more clearly structured environments for the building of trust. The ritual deposition at Vestre Hauge, and the other ritual depositions of the same type, with a mix of ‘local’ and ‘foreign’ objects along the coast, seem to fit nicely into such an interpretation, and give the same impression as Nyland (2016, 134) pointed out, of the early part of the LN being a time of ‘cultural hybridization’. If ethnography has taught us anything, it is that so called ‘first encounters’ are usually shocking experiences for the people being ‘discovered’, and that strangers in small hunter-gatherer societies often (but of course not always) are treated with fear and hostility (e.g. Diamond 2013, 50, 290). In this context, the need for ‘a safe harbour’ functioning as a socially acceptable meeting place would very likely be important.

### Harbours as a Source of Power

Later in the LN/BA, harbours probably further developed their role as institutionalized meeting places, as seen in the case of Sandspollen. And while control with strategic bottlenecks and harbours along the waterways undoubtedly was important for the formation of centres of political power in these periods, the potential for control of access to inland settlements through the harbours themselves should not be overlooked. Harbours, especially the harbours of high-rank settlements, could function as a kind of ‘social sieve’, where further access to the settlement itself was granted to some, but denied to others. This is indeed one of the last institutional characteristics of the harbour as we know it from later times, where the treatment of Europeans in Chinese ports under the Canton system, or in Japan during the Sakoku policy, may be mentioned as extreme examples (e.g. Schottenhammer 2007; Laver 2011).

A recent regional analysis of large-scale LN/BA land-use patterns on Jæren seems to support this interpretation (Prøsch-Danielsen, Prescott, and Holst 2018). Regarding the distribution of BA monuments, the authors observe that:

Four clusters of Bronze Age monuments are evident in South Jæren (fig. 8). They are distributed on top of marked drumlinoid ridges created by the Norwegian Channel Ice Stream, being found on both sides of the mouths of small rivers, that would have been inlets from the sea in the Late Neolithic and Bronze Age. Seen from the sea, these clusters highlight the route to the inland and coastal upland region, despite the fact that there were no good harbours on this coastal stretch. The same situation prevailed in the Late Neolithic/Early Bronze Age near the mouth of the river Orreelva, marking one of the inlets to the Central Jæren interior (Prøsch-Danielsen, Prescott, and Holst 2018, 65).
With no good natural harbours in this area, the mouths of the rivers would have to function as harbours, and control over these would probably be an effective way of regulating access to farms further inland. The distribution pattern of the broad bladed flint axes discussed above, with marked concentrations around the estuaries of large rivers, may also be an indication of the importance of rivers as routes between the coast and the inland.

As the importance of long-distance travel and acquisition of knowledge and exotic objects grew, the differentiated access to settlements also meant differentiated access to knowledge and the possibilities of acquiring such objects. The processes towards greater social differentiation and the development of social hierarchies in the LN/BA, both between individuals and between communities, were certainly complex. In the area of Jæren, Prøsch-Danielsen, Prescott, and Holst (2018, 69) identify sub-areas with different economical potential for agrarian and pastoral production, concluding that the uneven distribution of resources was one of the causes of the increased complexity and social variability. But the uneven distribution of knowledge was probably also an important cause of both the origins and the continued maintenance of structures of social stratification. Knowledge is never something entirely abstract. It resides in the minds and bodies of people (and their objects), who always occupy a specific point in physical space (Giddens 1984, 112; Bourdieu 2012, 96). It is therefore almost a trivial observation, that to control access to a certain geographical location also potentially is to control access to knowledge, and that this control may be a source of power. In a discussion about the institution of the harbour in the LN/BA, it is nevertheless important to keep this in mind.

**Conclusion**

This chapter has focused on the origins and structural properties of the institution of the harbour in Late Neolithic and Bronze Age Norway. Harbours are not easy to identify archaeologically, but it was shown that the distribution of certain tools may indicate that they have been used for shipbuilding, and that they are often found in possible harbours. The case studies have shown that the concepts of front and back regions may be useful when trying to understand the consequences of the radical change in settlement and subsistence patterns during the transition to the LN. Both the maritime region in general, and harbours in particular, seem to have developed more specialized front region functions at this time. In connection with harbours we find a wide range of social-material expressions of signification, domination, and legitimation, like graves, ritual depositions, and rock art.

It was also argued that the structural properties of harbours as institutionalized meeting places — sometimes visible in the form of clusters of earth ovens — and as places for building of trust, made them central arenas for cultural transmission of knowledge, for ‘cultural hybridization’, and the spread of southern Scandinavian ideas and technologies in LN Norway.

Lastly, this chapter commented briefly upon the recent focus of several authors on the importance of strategic control over travel and the waterways for the political geography in the LN/BA (Austvoll In Press; Prøsch-Danielsen, Prescott, and Holst 2018). Such control was undoubtedly of great importance, but it was suggested that the possibility of controlling access to resources of knowledge in the inland back region through control of harbours in the front region, should also be considered as one of the structural features that shaped the distribution of power and political geography in these periods.

The scope of this chapter has not allowed for a more detailed examination of some of the topics that have been introduced. I think, however, that it is important to try to develop theories that integrate our understanding of social institutions in the prehistoric agricultural and maritime landscapes, the relationship between these being key elements of later Norwegian prehistory and history. In doing so, identifying and theorizing Late Neolithic and Bronze Age harbours might be a suitable point of departure.


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What Can Artefacts Tell Us About Societies?

Foreign Objects in Bronze Age
Central Europe and Scandinavia

Introduction

With the beginning of the Bronze Age in the second millennium BCE (see Table 16.1), different cultural and social regions and groups across Europe engaged in intense and dynamic interactions, becoming more connected and intertwined than ever before. Networks of exchange and interaction are observable throughout the entire continent during this period. These networks are primarily visible through typological categories of artefacts and their spread, illustrated through distribution maps, as well as the occurrence of non-local artefacts and artefacts made from non-local raw materials. Bronze in particular is an obvious testimony to the distances bridged. Due to the uneven distribution of copper and tin in Europe, many regions were dependent on the importation of this precious new material. Different studies illustrate the movement of raw materials, commodities, and people within widespread, interlinked networks (Engedal 2010; Ling and others 2015; Ling and others 2014; Vandkilde 2014; Frei and others 2015; Kristiansen and Suchowska-Ducke 2015). We can also assume that exchanges within these networks included the exchange of immaterial aspects and cultural traits (e.g. Kristiansen and Larsson 2005). While the archaeological material reflects this possible process, the extent of this exchange is much debated (e.g. Harding 1984; Bouzek 1985; Schauer 1985). Recent work, like Kristiansen and Larsson’s The Rise of Bronze Age Society (2005) and the conference proceedings Der Griff nach den Sternen (Meller and Bertemes 2010), offer different approaches to the topic of an interconnected Bronze Age, especially concerning the exchange of materials. These approaches often differentiate between active centres and passive peripheries, with the later simply receiving and reiterating external impulses, while the former actively seeks and transforms valuable materials and objects. At the same time, both strong local traits and long-distance connections are visible within the different regional cultural groups. The occurrence of ‘foreign’ artefacts within local contexts hints not at a simple passive reception, but rather at a more active process. This process of integration and appropriation is complex and multi-layered (Hahn 2005, 101–07; Stockhammer 2012, 107). Central within it is the translation of ‘foreign’ objects and how they are understood, where function and meaning are assigned against the backdrop of the local cultural setting as well as original functions and values of the object. Accordingly, two questions arise: in which way were the ‘foreign’ influences translated, integrated, and reworked, and to which extent can they be traced through archaeological contexts?

Table 16.1. Chronology of the Central European Bronze Age discussed in this chapter (after P. Reinecke)

<table>
<thead>
<tr>
<th>Period</th>
<th>Bz A1a</th>
<th>Bz A1b</th>
<th>Bz A2a-b</th>
<th>Bz A2c</th>
</tr>
</thead>
</table>

To answer these questions, two case studies will be discussed in the following chapter — the Early Bronze Age spearhead from the Central German hoard at Kyhna, Saxony, and the Scandinavian scimitars from Period IB of the Nordic Bronze Age. Both examples represent artefacts with strong ties to the Outside or the Other (Helms 1988; Kristiansen and Larsson 2005, 32–61). Furthermore, both have no clear equivalents within the regions in which they

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were found, making them unique in their respective cultural settings. Other Bronze Age objects with supra-regional ties, like axes, swords, or jewellery, often have local equivalents, which are more common and easier to understand within a new setting. For these objects, a translation is either only necessary to a bare minimum and the process of translation is hidden within the archaeological contexts due to the fact that a larger number of similar objects were in use. A common element in both the spearhead and the scimiters is the lack of a sharp edge. Although both case studies presented in this paper represent forms of weaponry, the dull blades hint at a loss of a practical function in combat and a transformation of resulting values and meanings.

A Mediterranean Spearhead in Central Germany

The spearhead from the Early Bronze Age deposition from Kyhna (Saxony-Anhalt, Germany) is defined by its form, with the slotted blade and the short fish-tail-like tang (Fig. 16.1); it is unique in Central Europe. Based on the hoard composition, the hoard and the spearhead can be dated to the Bronze Age (Bz) A1b (c. 2100–2000 BCE) after Reinecke (Coblenz 1986). As a result, the spearhead is not only unique in its form, but also predates the occurrence of metal spearheads, which appear around the end of the Bronze Age period Bz A2c (c. 1625–1550 BCE) at the earliest.

While the spearhead from Kyhna is unique north of the Alps, parallels exist in the Eastern Mediterranean and Anatolia (Coblenz 1986, 68–69; Gerloff 1993, 73). In both regions, slotted blades with a tang can be found, while further typological divides can be observed based on the form of the tang (Fig. 16.2). Variants similar to the Central German blade are predominantly found in the Aegean, with the best resemblance in Renfrew’s type IIc, of which two are found on Amorgos in the Cyclades (Stronach 1957, 103–14; Renfrew 1967, 9–10; Gerloff 1993, 73). The type Renfrew IIc cannot be precisely dated, but the appearance in the burial site from Amorgos suggests it may date from the Early Helladic (EH) II–III (EH II: c. 2650–2200 BCE; EH III: c. 2200–2000 BCE) (Renfrew 1972, 150, 532). This dating is aided by other spearheads with a broad tang, Renfrew’s type II, which are found in EH II–III contexts. Maran (1998, 447) recommends a broader, more cautious dating between the second half of EH II and the Middle Helladic Period (c. 2000–1700 BCE). This dating is also supported by Gernez (2011, 334), who dates the usage of slotted spearheads in the Aegean and Anatolia between 2500/2400–1700 BCE. Concerning a chronological overlap between the Aegean and Central German spearheads, Gerloff (1993, 74) correlates the dates from the Mediterranean with the phase Bz A1 (2200–2000 BC) of the Middle European Bronze Age. While the slotted blades seem to appear earlier in the Aegean than in Kyhna, there is at least a short chronological overlap between both regions.

Both the typological similarities as well as the chronological overlap suggest an origin in the Aegean for the slotted blade from Central Germany, which raises the question regarding how it was received in the Únětice Culture in the Middle-Elbe-Saale region. Answers to this question might be reached through a comparison between the different contexts in which the spearheads were used in both regions.

In the Eastern Mediterranean, spearheads with slotted blades appear both in graves and in hoards, with the former predominantly occurring in Anatolia, and the latter first and foremost in the Aegean. Within graves, spears are usually accompanied by pottery and in several cases by other weapons, most often a single sword or dagger. Two Anatolian graves from Alaca Höyük (Stronach 1957), often listed as royal graves, and one from the burial site of Dokathismata on Amorgos surpass this pattern with the inclusion of further valuable objects like idols and vessels made from metal and marble (Gerloff 1993, 93; Rambach 2000, 10–12, table 2, items 2–5; table 13, items 1–3). Within hoards, spearheads were deposited with other metal objects, consisting mostly
of more weapons and tools. Hoard A from Troy is especially significant, where eight bronze blades and one silver blade alongside further weaponry and jewellery were found (Stronach 1957, 108; Gerloff 1993, 92–93). In general, the contexts suggest that spearheads with tangs probably occupied a primary function as part of the weaponry. Furthermore, the inclusion in richer contexts points to a possible limitation to higher ranking members of societies, suggesting further functions and meanings as objects of status and prestige. With the silver spearhead from Troy and its lack of a practical function due to its valuable, yet soft material, must make a symbolic function more likely, thereby transforming this spearhead from a practical weapon to a symbol charged with abstract values. Whether this symbolism was based on a basic meaning shared between all spearheads or limited to the silver piece is uncertain, but a shared origin can at least be considered.

The spearhead from Kyhna poses a slightly more difficult situation concerning the evaluation of its role within the local Únětice culture. The limitation to only one context of find reduces an analysis to a somewhat limited comparability. While the spearhead itself is singular, the hoard can be firmly anchored within the Únětice culture, thus offering an indirect approach to the role of the foreign slotted blade.

The hoard is composed mostly of jewellery: several arm spirals and rings, two pairs of discs — one with ornamentation — a necklace made from pieces of amber and bronze, spiral tubes and two pins, one of the Cypriote type, and one of the Horkheimer type (Coblenz 1986, 37–44), which allows the hoard to be dated to the Bz A1b phase. Besides the spearhead, another piece of weaponry in form of a small, worn down dagger blade is included. Most of the objects are typical for the central German Únětice culture, yet the Horkheimer pin and the ornamented discs are connected to the Straubinger group of the Danubian Bronze Age from Southern Germany, while the occurrence of amber demonstrates contacts with the Baltic coasts. Thus, the hoard represents a combination of local and foreign elements.

Its inclusion in a rich hoard suggests the spearhead had a certain value within local Únětice society. However, the extent to which it can be directly linked to a person of high status, as is probable for the inhumations in the Eastern Mediterranean, is uncertain. From the archaeological evidence alone, it cannot be determined whether a hoard was deposited by an individual or, as Bertemes (2016, 190) suggests for the Kyhna deposition, by a group, leaving the direct connection of the deposited objects to only one bearer open for discussion. While hoards constitute a large source for early Bronze Age finds in Central Germany, the practice of hoarding in general remains a mystery. Not only can it not be determined if hoards were deposited by a single individual or a group, but also the function of hoards cannot be specified as ritualistic or economical, symbolic or functional (e.g. Neumann 2012; Hansen, Neumann, and Vachata 2012; Melheim and Horn 2014, 23). The precise meaning and function of hoards may differ.
between different cultural settings and even within them, depending on the social and situational contexts in which the deposition took place. While the individual intentions and meanings of a single hoard cannot be reconstructed from the archaeological material, the grouping of several objects does suggest an intentional deposition and possible meanings beyond a simple hoarding of valuables, especially when similar combinations of objects are repeatedly deposited within a cultural region (Neumann 2012, 9). This repetition of hoards with similar compositions suggest that within a socio-cultural complex, hoards are the result of a ritualized act and consequently poses deeper meanings and social functions (Neumann 2012, 13). It is reasonable to not expect a single meaning or function, but several different layers taking place at the same time (Neumann 2012, 9–10, 13; Melheim and Horn 2014, 23). Nevertheless, these meanings are part of the immaterial culture and thus cannot be reconstructed...
through the archaeological contexts. Consequently, it might be best to follow the minimalistic definition given by Melheim and Horn (2014, 23) that ‘a deposition is a way of handling objects with a value or history, which in the Bronze Age may have had various more or less explicit motivations’.

Following this definition, the hoard from Kyhna first and foremost must be understood as an assemblage of valuable objects. This becomes even more obvious when considering the general cultural setting in Central Germany during the Bronze Age A1. Bronze and amber objects are rare during this period, completely absent from graves and only occurring in hoards (Zich 1996; Meller 2013, 515–21). These early Únetice hoards typically consist of an assemblage of rings, primarily Ösenhalsringe, arm spirals, and pins (Meller 2013, 516–17, Table 2). Thus, the hoard from Kyhna is well within the early hoarding tradition, although it also surpasses the normal content. The inclusion of an amber necklace with spiral tubes as well as the ornamented discs can be observed in another example of a Central German hoard. Although both do not occur in combination in other hoards, they further anchor the hoard in the early Únetice tradition. At the same time the ornamented discs, as well as the Horkheim pin, link the deposition to the southern German Straubinger group, where combinations of rings, pins, and ornamented discs can be found in female graves (Coblens 1986, 45–47; Massy 2018, 183–87, 248–51). Accordingly, the hoard from Kyhna could be seen as representative of a female attire (Coblens 1986, 44).

Yet, parallels in Únetice graves, both in the pre-classic phase Bz A1 and the developed/classic phase Bz A2 (c. 2000–1550 BCE) are missing, partly because bronze grave goods are highly limited, usually to single pins, and they seemingly following a strict hierarchy (Meller 2014, 628–37, fig. 18). Furthermore, the inclusion of a worn dagger and the slotted spearhead is unusual for female attire as well as for the early Únetice hoards, which completely lack weaponry. Rather, both foreshadow the hoarding traditions in Bz A2, where hoards usually consist of large numbers of axes, fewer daggers, and Stabdolche (halberds) as well as rings (Meller 2013, 516–17, Table 2; Lorenz 2013).

All in all, the hoard from Kyhna follows the developing Únetice hoard traditions. The fact that most of the objects are dress accessories might hint at a link to a female wearer. At the same time, the dagger and the spearhead are commonly assigned as part of male equipment. This inclusion of weaponry might suggest a change in meaning for the dagger and spearhead, but it must be pointed out that parallels in contemporary Únetice graves with a strict gendering of objects are missing. Pins appear both in male and female inhumations, whereas weaponry only occurs in very few graves. Amber and especially ornamented discs are missing completely in inhumations (Zich 1996). Furthermore, as stated above it is unclear whether the hoard was deposited by a single individual or a group. If the latter is true, it is quite possible that the hoard is not a representation of a single costume, but rather an assemblage from different individual attires (Bertemes 2016, 190).

While a first glance might suggest a similar setting and interconnection between the spearhead and high status within the community, a closer look both in Central Germany and the Mediterranean reveals a more complex situation. Although similar contexts as well as the possible connection to high-ranking members of society and thereby a role as a status object in both regions could hint at a shared function and meaning, these must be seen more as superficial similarities than as based on a transferred set of ideas and meanings.

An actual interconnection and occurrence of similar concepts is further limited by several circumstances. For one, the combination with other bronze objects in itself is not clear evidence of a shared set of values, as it is a rather common feature throughout Bronze Age Europe, especially concerning the combination of different types of weapons in hoards. A more solid hint on shared aspects, especially concerning the meaning, could be expressed through more tangible similarities in the combined objects, which are absent in this case. Furthermore, evidence for a direct or regular interaction between both regions during the first half of the second millennium is missing. This circumstance points rather towards a loss of original aspects and a construction of new values than a transfer of attached immaterial aspects. This change in meaning is furthered through the fact that in Central Germany, the spearhead is combined with objects associated primarily with female attire from an archaeological perspective, whereas in the Eastern Mediterranean, similar spearheads might be part of the male sphere, although the lack of human remains hinders a definite association with male bearers. This change of the assumed gender of the bearers between both regions might hint to a (partial) change in meanings and values assigned to the spearhead in the Únetice culture. This possible change is not only obscured by the lack of reliable osteological material in the Eastern Mediterranean but also by the fact that it is unclear whether the spearhead was really connected to a female individual or even just one individual in Central Germany, as argued above. Rather, the combination with jewellery in Central Germany must
be understood as an inclusion of the spearhead in the local material culture, following the established depositional norms and traditions of the pre-classical Únětice Culture.

Finally, the spearhead itself offers further insights. A direct comparison between the Mediterranean spearheads and the one from Saxony reveals some important aspects concerning the origin of the blade. The latter is much clumsier in its finish than those from the Aegean, showing clear forge marks, material displacements caused by the slots, and both a dull tip and edge — the latter rendering the spear useless as a weapon. The lack of wear gives the impression that its function is beyond a practical use as weaponry. Furthermore, the metal composition of the spear from Kyhna differs significantly from the Mediterranean examples but corresponds with the overall material composition of the Central German hoard (Krause 2003, 245, figs 223 and 247). The usage of typical Únětice Fahlerz indicates a local production of the slotted blade in the Middle Elbe-Saale region, even suggesting a forging in the same workshops as most of the Kyhna hoard (Krause 2003, 247). Consequently, the spearhead is not an import as such but rather a local imitation of a foreign concept or idea (Gerloff 1993, 73; Krause 2003, 247).

Two significant conclusions can be drawn from the spearhead; first, the idea had to reach the Únětice regions, involving at least the basic form and way of hafting, but not necessarily the original function and values. Secondly, the spearhead had to be understood or made understandable in Central Germany, to enable a usage of and interaction with it. It is important to emphasize that ‘understanding’ does not necessarily include the full knowledge of the original functions and immaterial aspects, but rather the ability to accept foreign influences, objects, or ideas based on local knowledge and to further incorporate these foreign aspects into one’s own cultural setting through the process of appropriation. Within the Únětice culture, weapons, especially daggers and Stabdolche (a type of halberd), appear to have taken a role beyond that of simple tools or weaponry, functioning as symbolic objects communicating the social rank and status of their bearers (Meller 2013). Thus, the spearhead might have been seen in a similar way, although the lack of a sharp edge points to a total loss of a function as a practical weapon, making it solely an object of status and prestige. Consequently, the idea of a spear as used in the Eastern Mediterranean would not have been directly transferred, but rather the idea would have translated to an object with an abstract function and a symbolic representation of a weapon as an object of power. The occurrence of this spearhead in a depo-
sition as well as in combination with ‘female’ objects might represent another, deeper layer of assigned meaning and symbolic function. An evaluation of this possible meaning remains uncertain and vague from an archaeological point of view, as meanings prior to the act of deposition are uncertain, along with the possible immaterial aspects and symbolism.

The Nordic Scimitars and Their Foreign Connection

For both the Central German spearhead and the Scandinavian scimitars (Fig. 16.4), the situation is best described as similar yet different. On the one hand, the swords appear alien in the Nordic Bronze Age. Like the Central German blade, their unusual form, the backward curving tip, the ear directly under the hilt, and the single-edged blade, suggests a foreign connection with parallels outside of Scandinavia. On the other hand, other than the previously discussed example, the scimitars are not limited to a singular object, but occur repeatedly in the Nordic Bronze Age. In total, seven curved swords in bronze, three from Sweden and four from Denmark, as well as one made from flint, are presently known.

A possible foreign origin was first proposed by Oscar Montelius (1917) based on the first, and at that point only, known scimitar. Since then, the possible origins were repeatedly discussed with every newly found sword. Explanations range from an origin in the Únětice culture (Fors slander 1935; Lomborg 1959), to an origin in Egypt (Montelius 1917), or Anatolia (Larsson 1999; 2000; Eng edal 2002; Kristiansen and Larsson 2005). At the same time, connections to the early Danish metal works and a local production (Vandkilde 1996; Sørens en 2012), as well as possible mixtures of foreign and local elements (Gräslund 1964), and even local origins (Kaul 1998; Filipp 2013), have been discussed. The extent of the discussion demonstrates how complex and multifaceted this phenomenon is.

Outside of Scandinavia, comparable objects are nowhere to be found in Europe. This limits the possibility of an origin of the curved swords in the Únětice culture as proposed by John-El oF Fors slander (1935) and others, although swords and the idea of the sword

1 Two swords from Rørby (DK) and one each from Vīby (DK), Kyndby (DK), Knutstrops gård (S), Agård (S), and Norre (S) (Eng edal 2002; Filipp 2013). The flint scimitar originates from Fars krov (DK) (Eng edal 2002; Filipp 2013). A second flint scimitar was found in the nineteenth century in Neبدو (S) but is lost with a short catalogue entry by A. Oldenberg (1974, 222 No. 1795a) as the only remaining piece of evidence.

in general reached Scandinavia from Central Germany and the Carpathian Basin (Vandkilde 1996; 2014). Rather, the best parallels occur in Hittite Anatolia. A direct evaluation of the Hittite scimitars and their contexts is not possible, as they do not occur in physical form in the archaeological record. Nevertheless, they are repeatedly depicted on reliefs, where they appear alongside other elements of weaponry and dress (Fig. 16.5), consisting of headgear, usually a crown, a helm with horns or a cap, as well as further weapons, and long robes. All objects are commonly understood as symbols and insignia associated with royalty and the divine (Larsson 1999; 2000; Eng edal 2003; Kristiansen and Larsson 2005, 271–73, 288–94). While the pictorial representations hint at possible functions and a symbolic meaning of the depicted objects, the limitation to illustrations results in difficulties for possible transferred ideas and values. First and foremost, the depicted objects cannot be identified for certain as scimitars. As Eng edal (2002, 36) emphasizes, several different interpretations are equally possible. Besides the reading as a curved sword, they could be understood either as a curved staff, the so-called kalbus (shepherd’s staff), or a sheath with a curved ferrule with the option of containing a straight sword as well. Respectively, the curved objects might have acted within a setting of symbols of power, might, and divinity (see above) within the context of reliefs. However, it is
not certain which objects embodied these attributes. Furthermore, the lack of physical evidence complicates a transmission of scimitars to Scandinavia and even more so of their attached values. With physical objects, a transport to Scandinavia is possible, even without the discovery of direct evidence of imported examples in the north of Europe or in regions in-between. But the limitation on reliefs hinders a direct exchange, restricting the knowledge of Hittite scimitars in Scandinavia to immaterial ideas and stories, which are more difficult to transfer and integrate, and are near impossible to trace through archaeological contexts.

Rather than putting more emphasis on a potential, yet uncertain, Anatolian connection, the Scandinavian scimitars themselves must be put into focus. A closer look reveals that they combine several different ‘foreign’ influences and local Nordic elements. As opposed to the Kyhna spearhead, the find contexts for the curved swords reveal little information, as most of the swords were found as singular depositions from wetland areas. Only the two swords from Rørby were most likely deposited together (Mathiassen 1953, 1958). Nevertheless, the single deposition in wetlands is well in line with the usual way of deposition of full-hilted swords in Scandinavia during Period I (c. 1700–1500 BCE; Vandkilde 1996).

Only three swords, the two from Rørby and the one from Knutstrop, show signs of décor, primarily composed of geometrical elements. The variation of motifs resembles the local Nordic Fårdrup style (Vandkilde 1996, 231) (Fig. 16.6a), which, in

Figure 16.6. Local Scandinavian elements of scimitars: a) objects ornamented in the Fårdrup manner, from the eponymous hoard (after Vandkilde 1996, fig. 240); b) early Scandinavian ship depictions from rock art and metalworks (after Kristiansen and Larsson 2005, fig. 92); c) a hilt of a metal-hilted sword (type Hajdúsámson-Apa) from northern Europe (Stensgård, Sjælland, Denmark) (after Hachmann 1957, taf. 19.6).
An exception to the general dating is the Viby sword, which is dated to Period II by H. Ottenjann (1969, 42), based on the décor of the hilt. H. Ottenjann (1969, 42), based on the décor of the hilt.

Another argument for the dating of Period IB is the design of the hilts and pommels of the swords. These resemble swords of the Hajdúsámson-Apa type, which appear both as imports as well as local imitations during Period IB in Scandinavia (Engedal 2002, 9; 13; Filipp 2013, 360, fig. 12). While the hilts and pommels of the scimitars resemble those of contemporary straight full-hilted swords, both in design and decoration (Fig. 16.6c), the transition from hilt to blade differs significantly from these. The scimitars lack a rivet plate and instead, the transition from hilt to blade is kept straight. A further deviation from the straight swords is the addition of a fastening ear or loop, which is unknown for other Bronze Age sword and dagger types. This ear is present on the flint scimitar as well, highlighting its essential role for the characteristics of the Nordic scimitars. Following the blade further down, it must be noted that the scimitars have straight, parallel edges, again differing from the curved blade of contemporary full-hilted swords. Furthermore, the blade was only equipped with one edge. Due to its thickness, this edge is far from useable, but nevertheless implies the intentions of a cutting edge. The transition between blade and the curved tip is dominated by pairs of fake rivets on both sides of the swords. While the rivets serve no actual function for the construction of the scimitar, they suggest a lost or imitated function to connect the tip to the rest of the body (Gräslund 1964, 302–03; Engedal 2002, 13–14). The curved tips are direct continuations of the blade and like the edges, they are kept dull.

Altogether, the different elements hinder the use of the scimitars as practical weapons. The dull edge, as well as the curved back tip, limits its practical use, let alone its usage as a cutting or stabbing weapon. Furthermore, the ear and curved tip hinder easy carrying in a scabbard. Rather, both the ear and, even more so, the curved tip with its fake rivets, resemble scabbards. The ear and the curved tip are stylized representations of the chape and locket. Taking the implied dull edge into account, the scimitars appear rather as a combination of sword and scabbard, as Gräslund (1964, 303) and Sørensen (2012, 52) have argued, merging elements of both objects into a new one. The result is not a functional weapon, but rather a combination of different aspects of swords, representing more the aspect of carrying a sword rather than its practical use in combat. The origin of this combination is hard to pinpoint. Gräslund (1964, 303) proposed that the scimitars are a result of a misunderstanding of Hittite swords in scabbards amongst Nordic metallurgists, though a connection to, or origin of, the idea of a curved scabbard in the Hittite Empire cannot be traced securely. Rather, some elements of the scimitars connect them with the general appearance and form of early metal-hilted swords, as well as with the material culture of the early Nordic Bronze Age. Consequently, they appear to be of Scandinavian origin, as well as connected to the supra-regional appearance of swords and the sword idea. Based on the décor in the Färdrup manner, as well as the depiction of a Scandinavian ship, it is safe to assume that they were at least manufactured in Scandinavia by Scandinavian smiths. The close similarities between all scimitars suggests a production in a single workshop or workshop tradition, and maybe even the use of the same mould in case of some swords, especially the ones from Rørby (Sørensen 2012, 50–52).

Both the origin and the exact function of the scimitars are at best vague. Nevertheless, the lack of a sharp edge, as well as the combination of a straight blade and the sheath must be understood as a loss of the function as a usable weapon. Respectively, the scimitars are not a direct copy or imitation of a functional sword but rather a translation of the idea of swords and scabbards; rather than copying the idea of a functional weapon, the scimitar represents a combination of both objects and their relationship to each other. The function as a weapon is still expressed through the suggestion of an edge, but reduced to a mere symbolic form, as it was not sharpened. With the addition of a fake riveted tip and a loop for fixing the sword on a belt, the scimitars rather embodied the idea of wearing swords and the concept of sword bearers. From a chronological perspective, the scimitars occurred at the same time as swords emerged as weapons. Linked to the rise of swords throughout Europe, a new ‘elite ideology’ spread as part of the sword package or warriorhood (e.g., Kristiansen and Larsson 2005, 231–49). It seems

3 A similar design of scabbards is missing during the Bronze Age. While organic scabbards are known from oak coffin graves from the late Period IB and Period II, no evidence for a curved chape is presently known. In general, metal chapes first appear in archaeological evidence during the Late Bronze Age, both in physical form as well as on Scandinavian rock art.
that the scimitars are a way to translate aspects of the new cultural package, rather than just a simple imitation of a foreign symbol, retaining its original meanings and values. The conscious use of local Fårdrup décor, as well as a very specific symbol like the ship, illustrates the integration and translation of a ‘foreign’, newly composed object, into the local cultural setting. The similarities between the different scimitars are of further importance. With the exception of the decoration, only a few deviations are present, hinting at an origin in a small community of craftsmen. The ornamentation of the two swords from Rørby, as well as the one from Knutstrop, even hint at a production in the same workshop and the use of a shared master for all three swords (Sørensen 2012, 52). This might suggest a selected circle of people responsible for the production and spread of the swords, and maybe even for their use. The translation would have been carried out by a few people, and the knowledge of the (symbolic) function and meaning might have been highly limited. The flint scimitar poses a break from this pattern, as it represents an imitation in another material. The translation into another material might indicate that the knowledge connected with the scimitar was available to a broader audience. At the same time, the flint scimitar might be seen as a possible indication for limited access to the bronze versions, and a way to circumvent the restrictions through an imitation in another raw material and in a different craft tradition.

### Discussion

The spearhead from Kyhna and the Nordic scimitars represent two ways in which foreign impulses and objects were dealt with in early Bronze Age societies. As discussed above, both appear as translated objects with changes in their use and attached values and meanings, but also with differences in the way they are received.

The Central German spearhead has clear similarities to the Eastern Mediterranean pieces, whereas the scimitars in Scandinavia appear to have no direct templates outside of the Nordic Bronze Age. These differences hint at two deviating ways of the translation and handling of foreign objects or impulses. The Central German object is a local imitation in which the foreign form was recreated as closely as possible by local craftsmen, while the immaterial aspects of the artefact appear to have changed and adapted to the local habits and system of symbols, meanings, and values. The scimitars, on the other hand, are of a complex and multi-layered origin, which is hard to pinpoint. Instead of a direct foreign template, this form of swords appears to be a hybrid of different objects that are furthermore combined with ornamentation in local Nordic traditions. Rather than being a copy or imitation of a foreign object, the curved swords are a conscious recombination of different (in part) foreign elements that result in a new object — one based on ideas and immaterial concepts rather than a direct physical object.

This translation through the creation of a new object is best described using the term ‘creative translation’ proposed by Vandkilde (2011, 54; 2014). This term allows a fitting synopsis of objects with neither a true foreign nor indigenous origin, but rather a combination of both. Vandkilde (2011, 54) applies this concept primarily for physical properties like material, forms, and decoration, thus subsuming objects with a specific and somewhat narrow variant of translation and integration. The example of the spearhead from Kyhna suggests that this relatively narrow definition should be extended. Rather than only including objects with a clear physical mixture of different influences, both foreign and local, objects with an unchanged foreign appearance, but a production in local workshops, should be included as well. In these cases, the creative process of translation rather occurs based on the understanding of the original form and its reproduction within the local traditions. Besides the physical aspects of the translation, both examples required creativity concerning their immaterial aspects, primarily the attached layers of meaning and values, as well as their function as a form of interconnected elements between immaterial and material properties.

The spearhead from Kyhna, which is a local imitation without a functional, sharpened blade, and not a true import, illustrates this loss of original function and meaning. While the Mediterranean originals could have served as usable weaponry with a possible symbolic function, the Central German one has lost its function as a weapon. At the same time, this cannot exclude a symbolic function as part of weaponry or the representation of a weapon. While the assumed symbolism as status object appears to be similar between both regions, it should not be seen as the same or as having a shared basis. Rather, the function for the spearhead as a symbolic weapon within Central Germany originates from a local tradition in which certain weapons like daggers and Stabdolche were seemingly limited to a small circle of users, acting as expressions of their social status, prestige, power, or roles within society. In a certain way, the slotted blade could count as a Bronze Age forgery, neither being of truly foreign origin nor retaining the original functionality and symbolism. While its form probably was received as ‘foreign’, it
was embedded within the local Únětice framework of values, symbols, and worldviews. To what extent the slotted blade was recognized as foreign remains uncertain and cannot be precisely evaluated through archaeological evidence, but if the ‘foreign’ character was indeed recognized, it might have added to the symbolic character, as it created a link to the Outside/Other without truly being from outside the local cultural sphere.

Likewise, the Nordic scimitars are not based on an actual object, but on an idea. A closer examination reveals strong ties to the development and spread of swords in Scandinavia and Europe as a whole. When viewed in isolation, they appear foreign and exotic, but a breakdown of the different elements of the scimitars reveals ties to contemporary swords and local traditions of ornamentation. Rather than being truly foreign, the Nordic scimitar appears as a recombination of different influences and as a translation of the new, transcultural concept of ‘swords’ and ‘sword bearers’. With the scimitar, the concept, rather than the actual sword, was translated in a creative and complex way that connected the foreign impulse with local traditions. This translation appears directly linked to the introduction and establishment of full-hilted swords in Period I and might have aided the breakthrough of swords and own sword types at the transition from Period I to II.

The loss of the practical function as a weapon provides a connection between both case studies. As already stated, both the spearhead from Kyhna as well as the Nordic scimitars lack sharp edges. Rather, they appear to only resemble weaponry in form, highlighting the translation of the objects. Rather than creating direct copies with their intended original function, the two cases are much more imitations and hybrids of original, foreign objects. Whether or not this loss of function as a weapon necessarily meant that the objects were no longer seen as weaponry is uncertain. The loss of a practical function might well have resulted in a symbolic representation of weapons and concepts interlinked with the two different types, both could have held meaning due to the circumstance that they represented weapons.

Translation, and in its special form ‘creative translation’, as parts of the process of appropriation, are active processes with conscious decisions, not passive reactions to external forces. This is especially true over long distances with limited possibilities for the transfer of immaterial values. Even when assuming a conscious adoption of original meanings, an unhindered direct transfer cannot be assumed over long distances. Rather, a form of communication resembling Chinese whispers, with resulting misunderstandings, is more likely. However, for the spearhead and even more so for the scimitar, simple ‘misunderstandings’ cannot be assumed as the reasons for change. Both cases display conscious decisions and an active translation in the adoption of foreign objects and impulses, resulting in copies — or in case of the scimitars in hybrid objects combining different objects and concepts — with changed and new immaterial aspects. Interestingly, both examples appear to be translated, used, and, in the case of the scimitars, recreated by a small group in their respective new societies. This circumstance hints at a small social group with possible links to outside of their communities, which are the driving forces for the establishment and translation of new, ‘foreign’ elements, and the connection with existing traditions. It seems that Bronze Age societies were, at the same time, flexible and grounded in their material culture, allowing an integration of external influences while keeping their own traditions and values. It is not so much a system of one dominant cultural group influencing another, but a conscious decision of equal groups, with an active process of integration and rejection of external elements and objects.
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16. WHAT CAN ARTEFACTS TELL US ABOUT SOCIETIES?


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17. Clay, Burial Urns, and Social Distinction in Late Bronze Age Southern Scandinavia

Introduction

In recent years, we have witnessed a tremendous increase in geochemical, biochemical, and biomolecular analyses on human remains that have given rise to new perspectives and interpretations on society, mobility, and interaction in prehistory (see below). The European Bronze Age seems increasingly to have been a dynamic world characterized by complex patterns of interaction at a local/micro-level as well as on a macro/continental scale. This work strives to demonstrate that there is potential for this complexity to be reflected in materials such as pottery, which has had a relatively marginal role in recent discourses about Bronze Age societies in Northern Europe. As we aim to show here, geochemical analyses of pottery can be used to add new layers of information to our knowledge about the period.

The main objective of this paper is to publish the results of recent geochemical analyses conducted on a selected number of burial urns and ceramic grave goods from the Nordic Late Bronze Age burial ground of Simris 2 (see Stjernquist 1961). The analyses were carried out with the primary aim of determining the local or non-local origin of the raw materials used in the manufacture of the sampled items. As a secondary objective, our results are contrasted with the results of petrographic studies on the ceramic material from the Gualöv burial ground dated to Periods IV–V of the Nordic Bronze Age (Brorsson and Hulthén 2007; Arcini, Höst, and Svanberg 2007, 113–14). Finally, this study demonstrates the potential that in-depth studies of ceramic production from southern Scandinavia may have for a deeper and more nuanced understanding of Late Bronze Age societies.

Late Bronze Age Studies and Modern Scientific Advances

It is beyond the scope of this paper to discuss in any depth previous studies of European Bronze Age societies; however, it should be briefly mentioned that the archaeological evidence for long distance exchanges throughout Europe and the Mediterranean have been of particular interest to scholars for some time (e.g. Sprockhoff 1956; Jockenhövel 1974; Thrane 1975; Harding 1984; Bousek 1985; Kristiansen 1998; Pydyn 1999; Galanaki and others 2007; Alberti and Sabatini 2013; Rowlands and Ling 2013; Bellintani 2014; Earle and others 2015; Kristiansen and Suchowska-Ducke 2015; Vandkilde and others 2015; Sabatini and Melheim 2017). An array of material demonstrates that during this era, European societies actively engaged in various scales of exchange networks, with the likely primary aim of obtaining locally unavailable raw materials such as metals (see below), but also salt, glass, and wool (see Harding 2013; Frei and others 2015; 2017a; Varberg, Gratuz, and Kaul 2015; Varberg and others 2016; Bender Jørgensen and Rast-Eicher 2016; Sabatini, Earle, and Cardarelli 2018; Sabatini and Bergerbrant 2019). We believe such intense interaction must have had a key role in shaping Bronze Age societies, possibly augmenting social and cultural contrasts, but also providing a source of inspiration at many different levels. The material presented in this chapter seems to support such a hypothesis.

In recent years, archaeological studies of the Bronze Age have arguably experienced a paradigm shift, in which interdisciplinary approaches combining the archaeological and natural sciences have taken centre stage in an effort to produce new knowledge.
about the past (cf. Prescott 2013; Kristiansen 2014; 2019; Vandkilde and others 2015; Booth 2019). Indeed, a growing number of new data sets are now available to researchers, helping to provide a new understanding not only about patterns of mobility in Bronze Age societies, but also, in some cases, about the mobility of specific individuals. The study of strontium isotopes and of ancient DNA are just some of the new sources of information that have yielded data relating to the mobility of people (e.g. Allentoft and others 2015; Frei and others 2015; 2017b; Haak and others 2015; Günther and Jakobsson 2016; Knipper and others 2017; Price and others 2017; Mathieson and others 2018; Olalde and others 2018). This has added dimensions to our understanding of prehistoric societies that previously were unthinkable. Investigations of lead isotopes on metal finds have shown that metal supplies arrived at their destinations in continental Europe through a multitude of sources (e.g. Ling and others 2014; 2019; O’Brien 2015; Pernicka, Lutz, and Stöllner 2016; Melheim and others 2018; Berger and others 2019), and that multiple communication channels must have been active at the same time, possibly complementing or competing with each other (Rowlands and Ling 2013; Earle and others 2015; Kristiansen 2016; Sabatini and Melheim 2017; Radivojević and others 2018). The time is therefore ripe for returning to much of the known archaeological material and investigating both old and new questions from different angles. Recent detailed analyses of specific contexts show the two-fold efficacy of such a strategy, which helps to better understand both local developments and the wider picture during the Bronze Age (i.e. Vandkilde 2017; Bech, Eriksen, and Kristiansen 2018).

Cremation, Pottery, and Distinction

The case studies analysed in this work are dated to the Late Bronze Age Nordic Periods IV–VI (c. 1100–500 BCE), a time in which cremation was the most common practice for treating the dead. Due to this practice, archaeological indicators for supposedly individual characteristics, such as status and wealth, significantly diminishes in comparison with previous periods, when inhumation was the most common phenomenon and when the body and its ornaments were not destroyed by fire (e.g. Bergerbrant 2007; Holst 2013). On the other hand, cremation as a rite is a very powerful and complex event (e.g. Sørensen and Rebay-Salisbury 2008). It also tends to involve local communities and specialist expertise to a much higher degree than inhumation (e.g. Thompson 2015). In addition, several works have suggested that with the passage from inhumation to cremation, the burial urns, in which the cremated remains were kept, acquired an important role to the point that they might be treated similarly as to the body of the dead (e.g. Svanberg 2005; 2007; Rebay-Salisbury 2010; von Eles 2012; De Angelis, Barbaro, and Trucco 2016).

Regarding the Late Bronze Age burial urns from southern Scandinavia, one should consider that during the whole period much effort was invested in finishing the surface of pottery in general (Eriksen 2009, 148–49, 279). Thus, ceramic production probably had a significant social and cultural role, worth exploring in all its dimensions. According to Eriksen (2009, 279), the functional and ideological values of the Middle and Late Bronze Age (Nordic Period II–VI) Scandinavian pottery lie not only in the decoration, but in the way the surface was finished. Thus, ceramics must have appealed both visually and in a tactile sense. It is argued that it was not only ‘visually communicative’ urns, such as the house and the face urns (e.g. Sabatini 2007; 2014; 2017; Kneisel 2012; 2013; see e.g. the urns from Graves 23 and 71 in Fig. 17.3), but also the apparently undecorated urns that populate Late Bronze Age burials from southern Scandinavia that may have embodied signs of social distinction, and should be considered as likely identity markers (Stjernquist 1961; Strömberg 1982; Olausson

Figure 17.1. Map of southern Scandinavia with the sites of Simris 2 and Gualöv (map by authors).
ICP-MS Analyses and Thin Section Analyses on Ceramic Material

In the last decade, ICP-MS (Inductively Coupled Plasma-Mass Spectrometry) analyses of pottery sherds have been increasingly used to determine the origin of ceramics (e.g. Little and others 2004; Brorsson 2013). ICP-MS is a chemical analysis that provides information on the chemical identity of a sherd by measuring a vast spectrum of elements down to extremely low concentrations (Golitko and Dussubieux 2016). Twelve trace elements in particular (Al, Ca, Ce, Co, Cr, Ga, La, Mg, Mn, Ma, Sr, and V) were measured and the result was used to identify the origin of the clay from which each pot is made. The selection was based on previous experience that demonstrated a reliable discriminating processing (e.g. Thompson and Walsh 1989).

TICP-MS analyses provide a large amount of data that can be statistically processed. We have, therefore, organized our data in a factor analysis and a cluster analysis, which combine samples of the same chemical composition, and thus likely geological and geographical origin (e.g. Little and others 2004). It is important to note that the ICP-MS analysis is not biased by the treatment of the clay. In other words, a coarsely or finely worked clay that has been originally taken from the same place will be placed into the same ICP group, while two fine clays from different places will be separated.

This paper presents the results of the ICP-MS analyses carried out on the samples from Simris 2 (see also Brorsson 2017). The ceramics from Gualöv, which have been used for complementary purposes in order to provide a wider overview including relevant, but different datasets, were not examined with the ICP-MS technique; they underwent petrographic analyses by optical microscopy on thin sections. The study of thin sections of potsherds is a well-established method (e.g. Quinn 2013; Degryse and Braekmans 2016), which allows not only petrographic analyses, but also helps to reveal other aspects of the pottery craft such as vessel-forming techniques and clay type, or to distinguish between added and natural temper, which cannot be detected with the ICP-MS analyses.

Overall, the case studies provide different information as to the characteristics of the local ceramics. Ideally, both analyses should be carried out for each sample, because they provide complementary information. In this work, we argue that by combining data from the chosen sites and from different analytical methods, a new understanding for southern Scandinavian Bronze Age ceramics can be put forward. Finally, we hope this pilot study will pave the way for much needed, larger scale investigations including both methods in the future.

Simris 2

Simris 2, in south-eastern Scania, Sweden (Fig. 17.1) dates to the Nordic Late Bronze Age. It was excavated in 1950s and comprehensively published a few years later (Stjernquist 1961). The publication contains a wealth of information about the site and includes an Appendix with the analyses of the osteological remains (Gejvall 1961). A total of sixty-three contexts were investigated containing graves of various types including cremations pits, urn burials and stone cists; a number of human skeletal remains were also found, but those belonged to a later Iron Age usage of the site. The Bronze Age burial ground
was primarily in use during the Nordic Period V (c. 900–700 BCE), with some contexts dating to Period IV (c. 1100–900 BCE), and only one grave (49) that according to Stjernquist (1961, 122) could be safely dated to Period VI (c. 700–500 BCE). Two graves provide apparent signs of familiarity with international networks due to the presence of a door (Grave 71) and a face/door urn (Grave 23). Both items have been interpreted as evidence for the local community — or some of its members — being linked to long-distance exchange practices (Stjernquist 1961, 45–57; Sabatini 2007, 149–71; 2014). Indeed, in central-Western Italy by the end of the local Late Bronze Age and beginning of the Early Iron Age (which correspond roughly to the Periods IV and V), the practice of burying specific individuals in house-shaped containers, the so-called hut urns, was blossoming (e.g. Bartoloni and others 1987; Bietti Sestieri 1992; Barbaro 2006). It has been argued that the hut urn phenomenon acted as a source of inspiration for the house urn tradition in Northern Europe, and that the latter represents one of the many outcomes of the long-distance exchange that characterizes the continental Late Bronze Age (e.g. Sabatini 2007; 2014). House urns can be divided into three different categories: the house-shaped house urns, the door urns, and the face/door urns (Sabatini 2007, 57–97). The last two types are represented at Simris 2. The urn from Grave 23 is a face/door urn with a door opening on one side and two eyes or face features on the opposite side (cf. Fig. 17.3). It therefore shows links with the face urn practice, which is also a widespread phenomenon across Northern Europe (Kneisel 2012). The presence of exceptionally shaped urns such as those in Graves 71 and 23 strengthens the idea that the community burying its dead at Simris 2 was acquainted with, or directly linked to, long distance networks of various sizes and characteristics.

The ICP-MS Analyses from Simris 2

Eight different graves were selected with the aim of including different types of urns, some grave goods, and to some extent graves with metal artefacts that can be dated (Table 17.1; Figure 17.2; Brorsson 2017). The face-door and the door urns from Grave 23 and 71 were also included. Eleven different samples underwent the ICP-MS analysis.

The sampled urns and vessels cover a range of types (Stjernquist 1961, 28–44; Fig. 17.3). However, the analyses revealed that differences in shape/type did not correspond to differences in the raw materials used. Although the sample may not be statistically significant, it shows that the clay that was used had a common alleged south-eastern Scanian origin, and that different sources were used from the surrounding landscape (Brorsson 2017). Urns from graves that were far apart were manufactured with the same types of raw materials, suggesting a complex use of the local resources.

A closer look at the results (Fig. 17.3) shows that the lid (which is indeed a bowl) of the urn from Grave 93 (Sample 10) and the coarse household vessel (Sample 11), which functioned as an urn for the cremated remains in the same grave, fall into completely different groups based on the statistical analyses of the ICP-MS results (Fig. 17.3); their clay and/or perhaps the temper derive from different sources. Our suggestion is that both the bowl and the urn were made at different times, and possibly used in different ways, until they were paired up in Grave 93. On the other hand, the bowl from Grave 93 shows such a significant similarity with the door urn from Grave 71 (Fig. 17.3), that they were most likely made of raw materials collected at the same location. A more nuanced interpretation would be possible if thin sections of the same pottery were also analysed.

From a topographical point of view, there is no apparent link between the burials containing the house urns. Grave (71) with the door urn is placed within what looks like a well-defined group of burials (for a detailed discussion on the topography of the burial ground see Sabatini, forthcoming) to the north of the stone paved area (see Fig. 17.2). The face/
door urn (Grave 23) was buried somewhat far away from, and to the south of the stone paved area. The results of the ICP-MS analyses add to this apparent lack of connections the fact that the raw materials for the urns comes from different sources (Fig. 17.3). On the other hand, the face/door urn from Grave 23 (Sample 1) and the biconical urn from Grave 60 (Sample 5) form a single (ICP) group (Fig. 17.3). These two urns were not only made from the same raw materials, but also have a similar biconical shape, and one could suggest that they were made by the same potter. The striking difference is that one was decorated with a face and a door opening while the other was not. In addition to the urn, two other ceramic grave goods (samples 6 and 7) from grave 60 were analysed. The ICP-MS demonstrates that as neither were made using the same raw materials as the urn (Fig. 17.3), they were probably made at different times and/or by different hands.

How should the use of very similar clay for vessels of distinct shapes be interpreted? Is it a casual choice based on the available resources, or does it correspond to some kind of link between the deceased, which were buried with the seemingly related objects? Topographically Graves 23 and 60 appear unrelated (Fig. 17.2). Do the links established by the ICP-MS analyses unveil an otherwise invisible connection between these contexts? The question remains open.

The results of our analyses suggest that none of the selected vessels were made with raw materials from outside south-eastern Scania, and that their manufacture was most likely carried out locally (Brorsson 2017). It also demonstrates that the same type of clay and temper could be used for very different vessels, deposited in different and far apart graves. This has implications for our understanding of the organization of ceramic manufacturing, necessitating further in-depth studies on larger datasets, work which could reveal significant patterns of distinction within communities as to the production and consumption of ceramics.

The Urns from Gualöv

The site of Gualöv (Fig. 17.1), excavated in recent times with modern techniques (Artursson 2007), has revealed a number of previously unknown aspects of not only Late Bronze Age burial practices in general (Arcini 2007; Arcini, Höst, and Svanberg 2007; Skoglund 2016, 118–21), but also relating to ceramic production and consumption patterns (Brorsson and Hulthén 2007).

The site is characterized by a relatively complex topography. It appears organized in two distinct zones (the eastern and the western areas) with distinct features, which may indicate that it was used by two socially and economically distinct groups (Arcini, Höst, and Svanberg 2007). The area to the east was better preserved and a significant number of grave monuments could be identified suggesting that presumably wealthy individuals were buried there. In the western area, even taking into account that the degree of preservation of the archaeological record was poorer, the burials had significantly fewer grave goods and monuments were missing (Arcini, Höst, and Svanberg 2007, 114–33). Traces of possible cremation places were also identified all over the site, suggesting that cremation events may have taken place close to the chosen area for each burial (Arcini, Höst, and Svanberg 2007, 145–57; Skoglund 2016, 119–20). However, the interpretation of such cremation places has been debated and other uses for similar features have been proposed (e.g. Henriksen 2009). The finds collected during the excavations were abundant, although their distribution was not homogeneous and included a wide variety of bronze objects and ceramic vessels. The two areas are mark-
Figure 17.3. Cluster analysis of the results of the ICP-MS analyses from Simris 2 (figure by S. Sabatini and Torbjörn Brorsson; drawings of Sample 1 and 4 by S. Sabatini; pictures of the other urns from Stjenquist 1961, Planche XXI–XXVI).
edly different from each other due to the contrast in the quantity of grave goods that were deposited in the tombs. Among other things, only 25% of the contexts from the western area had any bronze finds, while over 50% of the graves in the eastern area were characterized by bronze grave goods (Arcini, Höst, and Svanberg 2007, 140–45). The excavation clearly identified thirty-six graves of which thirty-four had the cremated remains in clay urns, and two with the remains deposited in a container of organic material of which only traces could be detected in the soil (Arcini, Höst, and Svanberg 2007, 119). Almost all the urns had some kind of lid — in one case the lid was actually a bowl placed upside down on top of the urn. What appears of utmost interest for the scope of this study is that a significant variety of vessels were used as burial urns.

The petrographic study of the ceramics from Gualöv made it possible to divide the material in two main groups: fine ceramics and functional/coarser pottery (Brorsson and Hulthén 2007). These two groups differ from each other not only in shapes and outlines, but also in technological characteristics. Fine ceramics appear characterized by burnished and decorated thin walls with elaborated profiles. The functional pottery is often undecorated and has simple forms, but is also technologically advanced, since it had to serve specific purposes such as holding high temperatures during cooking (Brorsson and Hulthén 2007, 268–69). One could therefore say that, while functional pottery was initially created to serve a practical function, the fine ceramics were probably produced for their aesthetic value, and in many cases were most likely made specifically for the burial event. This assumption seems supported by a grave with three almost identical urns placed directly next to each other within a mound in the eastern area (Fig. 17.4). The vessels belong to the fine ceramic group and share not only a distinct shape, but were also made of identical raw materials, identified under the polarising microscope. The analyses therefore suggested that they were probably made at the same time (Brorsson and Hulthén 2007, 282). The information from the petrographic study paired up with those from the osteological study — which revealed that there were bones from four different persons in those urns (one adult woman, one child, and two young individuals) — suggested to
the excavators that this may have been some kind of family burial that occurred after a tragic illness (Arcini 2007, 177–79).

The investigations on the material from Gualöv also revealed that the two classes of ceramics (fine and functional/coarse) had different distribution patterns. The coarser household pottery was more common in the western area, while the distribution of fine ceramics with biconical or articulated shapes was closely related to the burial monuments of the eastern area (Fig. 17.4). That the chosen characteristics of the urns might correspond to differences in wealth and social status seems confirmed by the fact that contexts with fine ceramics were also those in which the most bronze grave goods were found (Brorsson and Hultén 2007, 289–91).

Of interest for the scope of this study is the fact that differences in outlook and in technology/functionality do not emerge when it comes to the raw materials used. The petrographic investigations show that very different vessels were made of the same types of clay and temper. In other words, there is apparently no correlation between the sources and materials used and the desired outcome of the potter’s work. There are also no visible differences in the craft applied to produce the different types of vessels. Instead, it seems that local potters could make both household pottery and fine ceramics (Brorsson and Hultén 2007, 290–91).

To sum up, the evidence from Gualöv suggests that urns were generally made locally and according to local craft practices. On the other hand, the distribution patterns of the variously shaped vessels and the quantity of bronze grave goods associated with each type suggests that the form and the characteristics of the urns played a significant role. We argue that the differences reflected social distinctions between the various members of the community.

Concluding Remarks

On the basis of these results from the different analytical methods outlined in this chapter, we are able to say that both at Gualöv and at Simris 2 ceramics appear to have been made locally. At both sites a combination of technological and taxonomic features suggest that a number of ceramic products were made specifically for the burials — in particular the house urns from Simris, and in general the urns with biconical or sinuous profiles, which are also generally associated with a higher number of grave goods. Contemporary functional ceramics have distinctive shapes and have also been used as burial urns.

The distribution of the analysed ceramics at Gualöv suggests that the use of fine and functional ceramics as urns had distinctive topographical patterns within the burial ground, and that different quantities of bronze grave goods correspond with fine ceramics in contrast to functional ceramics. Specifically, fine ceramic urns tend to be accompanied by higher numbers of bronze items. However, the petrographic study of the material shows that all of the ceramic objects were manufactured locally and according to a coherent local craft tradition. Although this craft tradition could not be evaluated at Gualöv, the material from Simris 2 hints at a possibly comparable situation. The ICP-MS analyses revealed that very different urns from entirely different contexts could be made with the same raw materials.

The conclusion that can be drawn on the basis of these results is that Late Bronze Age burial urns from southern Scandinavia likely embodied signs of distinction and echoed in the burial arena differences and contrasts at a local and regional level (cf. Skoglund 2016, 116–33). We argue that even apparently simple locally produced vessels might have been significant identity markers for the members of the community. Additionally, it seems that the outline of the urns and their surface finishing, including the use of ‘foreign’ and ‘international’ shapes, rather than the material and the technology of which they were made, played a major role as to the identity on display.

The present study has identified a new form of contrast in craft, technology, and society during the Bronze Age. It seems that, on the one hand, easily available local materials such as clay and temper were used for a wide range of products such as fine, functional, and even exceptional ceramics (i.e. house and face urns). On the other hand, the product was then used selectively in burial contexts, the different forms embodying apparent signs of distinction between members of the local communities. ICP-MS analyses have shown that raw materials could be collected within the same geographical region, at different locations with site-specific combinations of trace elements. This in turn raises the question of whether the use of exactly the same clay (from a specific location) and/or temper was deliberate, suggesting that there might have been otherwise invisible links between contexts with very different urns. Finally, we believe that contemporary ceramic productions from continental Europe influenced the shape and characteristics of the burial urns in southern Scandinavia, possibly inspiring the rise of most of the fine ceramic types. Future in-depth studies, possibly combining both ICP-MS and petrographic analyses, are most welcome in order to understand the relevance of these external stimuli, and to shed
light on the complex interplay between local clay, local production, local identities, and externally inspired material culture as a powerful means for expressing social distinction.

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18. The Contrasts Within

Intersecting Identities in the Lusehøj Mound, Denmark

Introduction

Chiefly elites, their wealthy burials, consumption of wealth, and long-distance networks have received their fair share of attention in Nordic Bronze Age research. Individuals in outstanding burials have been recurrently studied and discussed as representing social elites and power hierarchies. Lately, new scientific methods, such as aDNA and strontium isotope analysis have increased the attention to individual biographies and the buried persons in and of themselves. The challenge is to relate the knowledge of individuals and unique incidents to collective perspectives on elites, power, and identities. We need approaches that allow us to integrate micro and macro perspectives and to explore the correlations between individuals and structures (Kristiansen 2014).

In this paper, I will examine two of the most spectacular Scandinavian Late Bronze Age (LBA) burials, in the Lusehøj mound at Funen in Denmark. I want to explore how individual and collective social categories and identities are represented in the burials, how categories and identities of difference may intersect, contrast, or reinforce each other, and how they are related to sources of power. First, however, the history of excavations and the amazing discoveries at Lusehøj deserves our attention.

The Lusehøj Mound

Near to the village of Voldtøfte, located in the southwestern area of Funen island in Denmark, resides some of the largest and most impressive prehistoric grave monuments in Scandinavia (see Fig. 18.1). Today, the three monumental mounds of Lusehøj, Bohøj, and Buskehøj can be viewed in all their might, as lonely remains of the original necropolis which may have consisted of as many as twenty-five mounds (Henriksen 2011).

During the nineteenth century, repeated excavations were undertaken in the area. From 1861 to 1862 the Lusehøj mound was excavated and a remarkably rich burial was unearthed (Thrane 1984). The excavators documented a stone cist, almost 1 m long, built of raised slabs and covered by one large flat stone. Within the cist they found a bronze bowl sealed by a firmly attached bronze lid, three small hammered bronze drinking cups, and a shafted, ornate bronze celt, all wrapped in a woollen cloth and an ox hide. The lid was covered with a thick layer of resin or birch tar, decorated with rock crystals and pieces of bronze and amber. The bowl contained cremated bones, two bronze razors, two bronze and two gold buttons, a washer of bronze wrapped in a small piece of gold foil, and a gold oath ring, which is now lost. The bones and objects were all wrapped in nettle textiles and a piece of fine leather (Bergfjord and others 2012). Unfortunately, the cremated bones were not collected but presumably redeposited in the mound. The burial was typologically dated to Period V, 900–700 BCE, and lately, the nettle textiles have been 14C-dated to 940–750 BCE (Bergfjord and others 2012).

From 1973 to 1975 the mound was re-examined by archaeologists from Odense Bys Museer (the Museum of Odense) and a second amazing burial was discovered (Thrane 1984). Due to its central location in the monument (see Fig. 18.2), and the supposed remains of a pyre at the place, it was interpreted as the primary burial (Thrane 1984; Kristiansen 1998, 176). The stratigraphy was never recorded during the excavation of the urn burial in 1861–1862, and thus the order of the funerals remains uncertain.
The burial was unusually complex in its construction, comprising a large pit, 0.98 m x 1.15 m and 0.3 m deep, covered by a layer of clay with woven straw mats on top. Around the mats was a rectangular enclosure made of braided willows, 2.85 m x 1.5 m and 0.5 m high. Charcoal-filled stake holes indicate that the fence was erected at the pyre site. Unlike the bronze urn burial, and indeed most burials from this period, the grave goods had accompanied the deceased on the pyre, and a large amount of more or less melted fragments of bronze and gold, mixed with cremated bones and charcoal, were deposited into the pit. Several objects have been identified among the numerous unrecognisable gold and bronze fragments; a piece of a bronze sword, a bronze button, a possible iron finger ring, gold foil from a pin with a disc head, remains of bronze chains with rectangular rattle pieces known from lurs, 400 small bronze bosses probably from a belt, bronze fittings possibly from a harness, and bronze nails and fittings from a wagon of the Hallstatt type (Thrane 1984, 78, 139–47; Kristiansen 1998, 176–77). The burial is dated to around 800 BCE, stratigraphically and by 14C on charcoal from the pit (Thrane 1984; 2004), while the cremated bones are 14C-dated to 840–760 BCE (Olsen and others 2011).

During the excavation of the mound in the 1970s, a large amount of bones (1095 g) was found close by a construction interpreted as the remains of the stone cist unearthed in 1861–1862. Due to the discovery of a piece of the bronze bowl among the bones, it is likely that these are the bones originally deposited in the urn. They may, however, be mixed up with bones from other, disturbed burials in this section of the mound.

The mound itself was made of grass turf, had an original extent of about 36 m, and was more than 8 m high (see Fig. 8.3). Wattle fences were built radially from the centre, perhaps to keep the sod in place throughout the construction. During the erection of the mound, turf was carefully stacked within and outside the braided enclosure, preserving its structure. In addition to the two burials described above, the large barrow enclosed four small, slightly older mounds dated to Period IV (1100–900 BCE). These mounds housed a minimum of eighteen cremation burials, mainly in urns. A significant share of the individuals in these burials were infants or young children (Thrane 1984; Jensen 2002, 376–80).

Together, the two burials constitute the richest Scandinavian grave find from the Late Bronze Age. The mound was considered unique, as most burials from this period are rather sparsely equipped. However, a number of extraordinary metal detector finds in the areas surrounding Lusehøj, indicate that some of the now eradicated mounds once housed comparable burials (Henriksen 2011). The mound has been interpreted as a chiefly or even princely burial, equivalent to the uppermost high-status burials in contemporary Central Europe, representing the emergence of a new ruling elite who based their power on controlling long-distance trade and the consumption of wealth (Thrane 1984; Kristiansen 1998).

Death, Funerals, and Society

When someone dies, it is not only the physical person that disappears, but also the deceased’s social relationships. Depending on the person’s status and position in the community, a long range of relationships, roles, rights, and duties may need to be renegotiated, reallocated, and recreated among the survivors. Some of this restoration might take place as part of the funeral rituals, which become an arena for competition, exchange, and creation of alliances (e.g. Bloch and Parry 1982; Østigård and Goldhahn 2006; Fahlander and Østigård 2008; Kristiansen 2012). Rituals are formal, fixed, and repeated practices which
Figure 18.2. Drawing of the excavated parts of the Lusehøj mound. GX (in the upmost red circle) marks the wagon burial with its rectangular enclosure, while AM (in the lowest red circle) is the stone construction where the bronze urn was found. The orange hatched circles show the small mounds underneath the large barrow, while the diagonally pink area indicates the excavation trench from 1861–1862 (after Thrane 2004, fig. 76).
may deal with specific circumstances, like funerals, through ordered sequences of metaphorical events which are acted out and performed (Bell 1992, 91–92). Ritual practices have a dialectic relationship to social structures and may perform, reproduce, and negotiate social relations, individual and collective identities, and the appropriation of symbols, and may thus be understood as part of social discourse (Bourdieu 1977, 120; Giddens 1984; Bell 1992, 130). Funerals concerning individuals in power positions may thus be highly political events where the very structures of power are actively produced rather than simply reflected (Parker Pearson 1999, 86).

Grave goods may have been personal possessions that signified wealth, status, and intrinsic attributes of the deceased’s actual or ideal social identity. However, objects can also act as ‘…metaphors for the self, as pivots around which narratives of personhood can be constructed…’ (Brück 2004, 313), expressing the relational character of identity through relationships with friends, kinsfolk, and neighbours, and even with places (Parker Pearson 1999, 84; Brück 2004, 325). In societies with a gift-based economy, things acquired as gifts might be considered as inherent elements of a person and even as essential components of selfhood (Brück 2004, 313). As such, certain objects may be considered material extensions of the body and linked to specific social identities of the deceased (Vandkilde 2006, 394). When the possessor dies, such objects might need to be handled according to the same rules as the body itself. In the case of Nordic Late Bronze Age, this would mean to destroy and transform them through fire by burning them on the pyre (see e.g. Fahlander and Østigård 2008).

### Power in Late Bronze Age Societies

LBA societies in southern Scandinavia have been characterized as theocratic chiefdoms where ritual and military power were intertwined, providing leaders with divine legitimation of power, or even status as demigods (Earle 1991a; 1991b; 1997; Kristiansen 1998; Kristiansen and Larsson 2005). This conception was created and reproduced by a complex cosmology played out in a long range of rituals including votive offerings, spectacular funerals, ritualized drinking and feasting, the employment of lurs, special dress, and even chariots and wagons (Kristiansen 1991, 27; Kaul 1998; Kristiansen and Larsson 2005, 225).

The occurrence of richly equipped burials is an indication of stratified and hierarchical communities. Still, authority was exercised on many levels and by various groups of people, and political power was dynamic, unstable, and constantly negotiated. Accordingly, political organization varied between different regions and over time (see also Yoffee 1993; Kienlin 2012). Control of land and labour was limited and primarily practiced at a local level. Military power may have extended beyond the local setting but was, in all probability, mainly expressed as raiding for slaves, cattle, and trade goods (Kristiansen 1998, 58–59; Kristiansen and Larsson 2005, 365). Leadership positions were presumably acquired, not inherited, but even so kinship and ancestors were most likely an important basis from which authority was derived (Kienlin 2012). Hence, access to origins and controlling media related to notions of genesis may have been crucial in strategies aimed at legitimating a superior position, for individuals as well as for groups (Helms 1998, 5).
The collective power of the elite was expressed, executed, and reproduced through individual actions and symbols, and how we grasp the dynamics in practices of power depends on perspective. To explore how various sources of power on individual and collective levels were combined, and how they were related to social categories and identities, the concept of intersectionality might prove useful.

**Intersectionality**

In the last twenty years, the concept of intersectionality has made its way especially into feminist research. Intersectionality as a term derives from the black feminist movement in North America, with its roots in identity and standpoint theory, referring to the interaction between gender, race, class, and other categories of difference in individual lives, social practices, institutional arrangements, and cultural ideologies, and the outcomes of these interactions in terms of power (Davis 2008, 68; Staunæs and Søndergaard 2011, 46). Originally, intersectionality was developed to address how different forms of discrimination and subordination interact and reinforce each other (Crenshaw 1991). In particular, the concept emphasizes how gender is always intersected by other identities, and that different social categories cannot be understood in isolation from each other (Staunæs and Søndergaard 2011, 45). As such, the concept has proven useful when examining how different social categories and structures may work together, not only to suppress, but also to engender and reinforce the power of individuals and groups.

Social categories, like gender, family, elite, or warrior, are performed, produced, and transgressed through practices in daily interaction (Butler 1990; Staunæs 2003, 104). Practices of power create social categories which mutually construct social hierarchies. When such practices and categories intersect, they may reinforce mechanisms of power, and even transform given categories. By investigating the intersections between categories of difference, or how they are performed and related through practice in specific contexts, we may initiate a process of discovery that gives insight into the constitution of dominance and social hierarchies (Davis 2008, 79; Staunæs and Søndergaard 2011, 52–54).

**Categories of Affiliations and Difference**

In the following section, social categorizations that may be represented in the two Lusehøj burials, and which may have constituted categories of affiliations and contrasts, will be outlined and examined.

**Mortal Humans**

Both individuals were cremated and buried in accordance with current general rules guiding the funerals of men, women, and children in the Nordic area in the LBA (Kaliff 1997; Thrane 2004). Their bodies were burned, and a minor share of the cremated bones deposited before the mound was raised. This treatment was probably related to beliefs of releasing a soul or spirit from the body to ascend to the gods, join the ancestors, or regenerate (Kaliff 1997, 93; Østigård 2007). It has been suggested that prominent leaders were considered divine (Kristiansen 1998; Kristiansen and Larsson 2005), but the rituals performed in connection with their funerals suggest that they were also regarded as mortal humans in the sense that their bodies had to be physically processed equivalent to other humans in order to move on (Kaliff 1997).

**The Local Community**

The Lusehøj barrow required about 129,000 working hours to build and a mustering of people willing to contribute a huge effort (Thrane 1984, 152). The erection of the monument was a manifestation of the capability of the community, but also an act of commemoration and a collective ritual (Goldhahn 2009, 69). Through this work, the participants created shared experiences and stories, producing and reproducing social bonds, alliances, and networks at the local level (Østigård and Goldhahn 2006, 41). These processes also created and defined the group that the mound represented and emphasized the deceased’s central membership of this group. Permanently placed, the mound continued to relate the buried persons to the local community for generations to come.

**Nordic Identity**

Both burials contain genuine Nordic metal objects, like the razors, celt, buttons, a gold-plated pin, and possible luris, displaying an affiliation to the region (Baudou 1960; Kristiansen 1998, 70–71). The Nordic style and technology had deep roots in time and tradition, and most likely expressed a shared religious cosmology and ideas of a common origin. The employment of these artefacts, and the practices they represent, suggest that both deceased had, or were perceived to have, an identity native to the region (see Kristiansen 2011).
Elite Members
Along with the monumental mound itself, the Nordic bronze artefacts signify that the individuals in the burials were members of, and representatives for, leading groups in society. In addition, rarer, though not unique items in LBA burial contexts like the sword, the rattle pendants, the gold buttons, and the oathing ring indicate that the deceased belonged to an even smaller group within the uppermost elite on Funen, above the level of local leaders. It has been suggested that the Lusehøj burials represent a regional dynasty located in Voldtofte (Kristiansen 1998, 176–80).

Ancestral Line
The custom of raising large mounds mainly belongs to the Early Bronze Age (EBA) in southern Scandinavia. In the LBA, the reuse of old monuments for secondary burials was the common rule (Thrane 2004), and few mounds of the Lusehøj size were built during this period (Thrane 1984, 166–72). To construct such a barrow around 800 BCE was a symbolic recreation of a past time of large monuments, and may thus, on one hand, have generated and accentuated a connection to mythical and ancestral chiefs, their abilities and power. On the other hand, to raise a new monument, instead of reusing an old one, may have been motivated by a desire to establish something comparable, but new. The covering of the four small mounds on the spot points in this direction. To conceal the memories of preceding local ruling families by literally cannibalising their monuments, is a strong statement of the superiority of the new rulers. It is, nevertheless, tempting to ask whether the builders of Lusehøj actually knew that nearly half, 10 out of 25, of those buried in the small mounds were children and teenagers (Thrane 1984, 204). If they did, the construction of the large mound may have been related to personal motifs, like a kind of revenge or a literal embracement and incorporation of known families into present power and greatness. More likely, they were not aware of such details, as several generations probably went by from the last burial in the small mounds to the large monument was raised (Thrane 1984, 154). Thus the construction of the monument is directed towards the smaller mounds as symbols and appears as a conquering of space and erasing of preceding power.

Global Citizens
Both burials exhibit contacts with areas outside the Nordic region, not only through the presence of imported objects but also by applying ‘foreign’ practices. The use of a bronze vessel as an urn has few parallels, but a similar bronze amphora was employed as a bone container in the extraordinary princely burial in Seddin in Northern Germany (Kristiansen 1998, 172–74). The vessel itself is one of three known comparable specimens in Scandinavia, but typological features suggest that it was made in the Kärnten-Steiermark region in the south-western area of Austria (Thrane 1984; Bergfjord and others 2012, 12). The lid is unique in a Nordic context and has an equivalent only in Benacci in Bologna, Italy (Thrane 1984, 19). Recent strontium isotope analyses of the nettle textile have revealed that the cloth may originate in the Kärnten-Steiermark area (Bergfjord and others 2012). Accordingly, the two items might belong together and several scenarios are possible. The deceased may have died during a journey in the Austrian area, whereupon he was cremated before the remaining bones were wrapped in local nettle textiles and brought home to Funen in the bronze urn. The bowl and the cloth, possibly wrapped around something else, may also have been received as a gift (Kristiansen 1998, 184), establishing or confirming important long-distance relations.

The bronze cups found in the urn burial make up a drinking set that corresponds to findings in elite burials throughout Central Europe during the eighth century and reflect social and ritual drinking traditions (Kristiansen 1998, 172). Like the bronze vessel, they may represent a specific long-distance relationship but also signify knowledge and even adoption of foreign elite drinking practices.

The wagon was most likely of a Central European Hallstatt type, and costly four-wheeled wagons, full sized or miniature models, are found in elite burials in Central Europe, Italy, and Iberia (Kristiansen 1998, 176). The wagon is the only one found in a Scandinavian LBA burial and may have been transported in pieces from somewhere in the Hallstatt region (Thrane 1984, 143–45). Accordingly, the wagon may originate from the same area as the bronze urn and the nettle textiles, and its presence in the burial show contacts with, and knowledge of, the Hallstatt culture.

Additionally, the burning of the grave goods bears resemblance to Homeric traditions which are also known from some of the earlier Central European princely burials (Kristiansen 1998, 176). The deceased was given a spectacular funeral, displaying a real or aspiring membership in the pan-European uppermost elite. The idea of putting the grave goods on the pyre might have originated in a request from the deceased, but the knowledge and will to implement the ritual was in the hands of the surviving community. The habit of wrapping cremated bones in textiles is also described in Homer’s Iliad (xxiii, 252;
Thrane 1984, 132), but as it was the very placement within a bronze urn that preserved the nettle textiles, it is hard to say whether such a treatment of bones was a common or unusual incident.

Finally, the construction of the wagon burial with its wattle fences and straw mat has parallels in Cimmerian barrows in the Northern Caucasus. A comparable use of a mat is also found in a possibly contemporary large tumulus in Hungary (Kristiansen 1998, 425 no. 5). Kristiansen (1998, 425 n. 5) argues that along with the horse gear and wagon this evidences the impact of the Cimmerians, even in Northern Europe.

**Gender**

The osteological analyses of the cremated bones suggest that the bronze bowl contained the remains of an adult male (Thrane 1984, 202). As said above, it is not certain that the bones originate from the bronze urn burial alone, but the occurrence of two razors in the urn, a type of artefact that is predominantly found in male burials in Funen in the LBA (Skogstrand 2016, 56), supports an interpretation of the deceased as a male. Moreover, the person was buried in accordance with masculine LBA ideals, promoting a hegemonic masculinity of beautification and martial art (Joyce 2000, 11; Connell 2005; Skogstrand 2016, 70).

The bones from the wagon burial are considered to be from an adult but no sex estimation was possible (Thrane 1984, 202), and the grave goods are ambiguous. The fragment of a sword suggests that the deceased was likely male, based on the connection between males and swords mainly in EBA burials in Denmark, but also on the more rare occurrences of swords in LBA burials with razors in Scandinavia and Northern Germany (Thrane 1984, 161, 166–72; Kristiansen 1991).

Other elements in the wagon burial have been related to females (Thrane 1984, 146; Kristiansen 1998, 177). Disc-headed pins occur more frequently, although not exclusively, in osteologically estimated female LBA burials at Funen (Skogstrand 2016, appendix 4), and ritual depositions of wagon parts or harnesses have been found in combination with jewellery (Thrane 1984, 146; Kristiansen 1998, 177). But gender is a matter of context, and objects become gendered through repeated practice and association (Butler 1990; Sørensen 2000, 82). While the pin presumably was a personal outfit associated with daily use and the gender of certain individuals, a gendering of wagons and harnesses would be related to gendered practices involving wagons and horses. The concurrence with jewellery in hoards is, thus, not inevitably tantamount with a feminine association, something which is emphasized by the so-called mixed LBA hoards, containing both jewellery and weapons (see Melheim 2015 for a further discussion of these hoards). Further, hoards and burials are not necessarily comparable situations and they imply quite different practices. In Central Europe, wagons are usually found in male burials (Kristiansen 1998, 177), and if we conceive Lusehøj within the context of a pan-European elite system, these burials are more relevant parallels than Danish hoards. On this basis, it is probable that the deceased in the wagon burial was a male. The burial is, nevertheless, atypical and does not represent hegemonic masculine ideals, at least not in the same way as the bronze urn burial does. The queerness peculiarity of the burial still obfuscates the question of gender, and this might have been its very purpose (see e.g. Blackmore 2011; Alberti 2013).

**The Beautiful Warrior**

Bronze razors may have served as regalia for elite warriors (Treherne 1995; Kristiansen 1998, 181), possibly signifying a masculine ideal of grooming and controlling the body, a beautification and modification of appearance reserved for elite men (Treherne 1995; Joyce 2000, 11; Skogstrand 2016, 65–67). Also, the gold buttons and now lost oath ring may be discussed within a framework of beautification, as visible, exquisite objects, conspicuously stating not only the owner’s status and rank but also his capabilities and inner qualities. The correspondence between cultural ideals and dominating power structures on a collective level may have established a hegemonic masculinity related to and symbolized by the bronze razor (Connell 2005, 77; Skogstrand 2016, 65–67).

**The Ritual Specialist**

The unique presence of the wagon, and the possible occurrence of lurs, echoes the image of a ritual chief and specialist responsible for chiefly or communal rituals. Ritual sacred knowledge could be obtained by travelling, and the performances of rituals were important to legitimate the position of leaders (see e.g. Helms 1998; Kristiansen 1998, 96; 2011, 202; Kristiansen and Larsson 2005). A ritual specialist held and controlled sacred knowledge, but his/her power and influence surely relied on the abilities to take care of the cosmological wellbeing of society. We may expect that the person in the wagon burial held especially valued knowledge and remarkable skills, and therefore was powerful and respected. However, to bury the ritual equip-
ment along with the specialist, and even burning it, were not common procedures and suggests that the buried individual was extraordinary in some sense. Perhaps, the person was considered to hold exceptional powers and even to be dangerous, and so to control these powers after death the objects associated with the abilities had to be ritually destroyed along with their owner (Eliade 1978; Brück 2004).

The Entrepreneur

The wagon burial stands out with several features occurring for the first time. No other Scandinavian burial contains wagons, until the late pre-Roman Iron Age. Also, the iron ring, possibly a finger ring, is a rarity, and perhaps the earliest occurrence of iron on Funen. In addition, the funeral rituals, with the burning of the grave goods and deposition of bones, pyre remains, and burned objects into a large pit, without any type of bone container, is probably the earliest burial of this type in Scandinavia (Thrane 1984, 134, 144–45). The deceased may have been an entrepreneur, a progressive and innovative person adopting new customs and promoting new thoughts. Some of the ideas were perhaps buried with him/her, while others persisted into established traditions.

Intersections of Affiliations and Contrasts

In the following, I will explore how the different social categories and identities on micro and macro levels, as identified above, may intersect and contrast, along with their relationships to sources of power.

Lusehøj — Practice as Usual and Collective Traditions and Identities

It has been repeatedly stressed that Lusehøj is exceptional. Thrane (1984, 146) compares the barrow and its burials to an individual that refuses to be restricted by current norms in society and argues that the wagon burial differs from other burials in nearly all respects. Kristiansen (1998, 176–77) also stresses that the burials represent a break with traditions and stand out in a local as well as a regional context, accentuating the very special positions of the deceased. Surely, some of the grave goods and funeral elements are undeniably unique and amazing, and when the extraordinary components are added up, the mound becomes peerless. However, the preceding examination of social categories and identities represented in the mound reveals that the funerals, in most respects, follow the main contemporary common rules with regard to ritual practices.

The collective social categories and identities represented in the burials were, in the main, shared by large groups in society. The deceased were perceived as mortal human beings, and as such, they belonged to known ancestral lines and were considered as related to people in the local community. Their statuses as relatives and members of society were recreated and confirmed through the erection of the mound. The common Nordic style and identity was shared, not only by the elite, but also by ordinary people, identities over the longue durée which were supported and strengthened by the significance of ancestry performed through the funeral rituals (see e.g. Kaliff 1997).

A hegemonic masculinity related to warriorhood and grooming was most clearly pronounced in the urn burial. As an individual, the buried person may have embodied capabilities and an appearance that manifested the ideal of a man and essence of masculinity, or these ideas may mainly have been staged in the funeral as an important aspect of his position. Nevertheless, masculinity was performed through the means of Nordic style objects which may have promoted specific notions of masculinity as something eternal and given, related to ancestry and origin. Accordingly, the ideals of the beautiful warrior was something all men had, or should have, in common and they set standards for actions and appearances that in all probability were pursued by most men, structuring their choices, values, and practices in daily life (Connell 2005, 77; Skogstrand 2016, 65–67).

Power of Difference — Power of Knowledge

The Lusehøj burials leave an impression that all available means were activated to establish, display, and legitimate someone’s power and position. Categories on different levels, from the unique individual microlevel to the global alliance network macrolevel, each create independent bases of power and the summation of all these layers creates an image of overcompensation, suggesting that someone had something to prove.

The mound itself required a tremendous mustering of people and thus represented the power and capability of the community that created it (Goldhahn 2009, 69; Kienlin 2012, 22). Accordingly, individual categories of power and difference represented in the burials were situated within and intersected by the collective identities and categories represented by the monument. In this way, the local community was related to a global network signified by the occur-
rance of foreign objects. These networks may have provided important alliances in games of thrones as well as securing bronze supplies, which in itself was an important source of power (Kristiansen 1978). Long-distance contacts could also assure individual knowledge of remote areas and societies, knowledge that gave authority in important questions concerning influence and decisions in the local community (Helms 1988, 159–60; 1998; Kristiansen and Larsson 2005, 39).

Ancestral lines constitute family categories of affiliation, but also categories of difference. While some ancestors united the community as a whole by a common origin, others defined different lineages within society, granting only a few families the entitlement to power (Helms 1998; Kienlin 2012). The intersection between present exclusive family groups, lineages of ancestors, and a class-like, regional or even pan-European elite, confirmed and reinforced the importance, legitimacy and thus the power of the members of the leading family.

Gender always intersects with social hierarchies and hegemonic masculinity, represented by the beautiful warrior, is a result of cultural consent, institutionalisation, and marginalisation of alternatives (Connell 2005, 76–77; Skogstrand 2016, 16). It was primarily elite males who had the opportunity to fulfil the ideals of warriorhood, beautification, and skills in the martial arts and thus only these men could achieve the status of 'real' and thereby iconic men, legitimating unequal access to power and resources (see also Kristiansen 2012; Skogstrand 2016, 65–67, 114). These mechanisms may be evident in the urn burial, where symbols of masculinity, ancestry, and alliances are performed as a unity but where they still gain power by the intersection of each other.

In the wagon burial, the individual power of the presumed ritual specialist, the power of esoteric and secret knowledge, and potentially dangerous power of magic (Helms 1988, 13), symbolized and materialized through the destruction of ritual gear, was intersected by membership within the elite, providing a formal position of authority which perhaps made his/her power and status unquestionable. This firm base of power may have yielded the freedom to introduce new thoughts and practices, a ritual entrepreneuring that may have increased the impact, respect, and perhaps fear of the individual even more. Through the intersections with ancestry and community performed in the burial, the power and respect of an extraordinary individual may have raised the esteem of his/her family group and even their community as a whole.

Contrasts

Although intersectionality primarily deals with how social categories and structures confirm and reinforce the meaning and power of each other, the application of the concept also reveals how some categories seemingly perform divergent stories.

In both burials there is an apparent contrast between the foreign and the local. In the urn burial the local traditions and Nordic identity represented by the common funeral ritual practices and the Nordic style items is contradicted by the use of an imported bronze vessel as urn and possibly the ritual practice of wrapping the cremated bones in textiles. Likewise, in the wagon burial, the Nordic image presented by bronze objects is challenged by the presence of a foreign Hallstatt wagon and perhaps even Cimmerian funeral customs. This likely mainly reflects different bases of power applied by the elite, but the discrepancy may also echo a latent conflict between traditions and inventions, between old and new structures of power, and sources of influence. In this light, the pioneering elements in the wagon burial may be perceived as additional urgings for change in an ongoing discourse of identity within society. In the burials, the local community represents the establishment, while the high-status individuals embody new thoughts and global identities. Still, the foreign is incorporated and literally built into well-known traditions, possibly reflecting how changes in identity as well as norms and beliefs took place in society. As such, contrasts do not necessarily equal conflict.

There is also a contrast between the extraordinary and the ordinary. Both burials exhibit traditional funeral rituals and common objects, but also unique items and practices. It is tempting to ascribe the extraordinary to individual circumstances — to extraordinary individuals — exactly because they are deviating from the collective and common. But what if the extraordinary is not reflecting the individual, but a collective identity? Following the preceding paragraph, the exceptional elements could be perceived as a matter of class and distinction, and a desire to dissociate from the established traditions of the upper strata of society, by a group that wanted to distinguish themselves as something different (Bourdieu 2010).
Concluding Remarks

Everything connects to everything else. In the preceding discussions I have explored some of these connections and intersections, how different categories of affiliation and difference, as they are represented in the Lusehøj burials, may have influenced each other on micro and macro levels in terms of identity and power. The discussions reveal different relations and influences than usually highlighted and illustrate how various mechanisms and sources of power enforce one another and engender the position of certain groups and individuals.

The Lusehøj mound, despite its astounding content, was a monument of the common and collective, and the two deceased, even though they were extraordinary, were considered at least in some respect as normal mortal human beings. The man in the urn burial represented ideas and ideals of masculinity that were valid for most men in their contemporary society. Accordingly, as an individual he may have been considered a man like any other, or at least as the first among equals. Further, the examination of intersections between various categories of difference shows how the power of the community formed a base for the power of the elite as well as of certain individuals. Different sources of power on the micro and macro level engendered, reinforced, and legitimated each other. The categories identified in the mound also express contrasts, which may signify diverging discourses of identity but also how society dealt with such contradictions.

By exploring how various categories of difference intersect, and thereby scrutinizing connections between the individual and the collective levels of society, it is possible to discuss how individual biographies, practices, and identities were situated within, but also reproduced, overall structures. In other words, an integration of micro and macro perspectives provides new insights into and a broader understanding of prehistoric societies.


18. THE CONTRASTS WITHIN

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19. Contrasting the Women in the Rege and Molkhaug Mounds

Poised Between the Here and the Beyond

Introduction: To Come from Somewhere

The current focus in Bronze Age research is on individuals and their biographies and mobility, traceable by way of isotope and strontium analyses (Frei and others 2015; Frei and others 2017a; Frei and others 2017b; Olalde and others 2018; Bergerbrant and others 2017). This focus is based on an understanding of individuals identified by their mobility and their supra-regional networks. It has been instrumental in bringing Bronze Age research forwards. The strong focus on mobility, however, can lead to an unbalanced narrative (see also Prøsch-Danielsen, Prescott, and Holst 2018, 52). What is lost is the fact that everybody comes from somewhere and as well as being situated in relation to their networks, people are also situated by their belonging to a place, a farm, a subsistence strategy, a society, or a cosmology. In short, this situation occurs within an ontologically predisposed worlding where becoming cannot be separated from becoming-with, in the sense of becoming with others — humans and non-humans — society and environment. Worliding is used here to denote the way that emergent life worlds are created and constituted from all aspects of a lived reality. In terms of isotope analyses, this means that trace elements are part of the belonging to a particular locale as well as indicative of mobility. Less attention has so far been given to their homes, places individuals leave, or are sent out from, and how they carry their homes with them as specific places, memories and belongings beyond as baseline minerals in their bodies.

This chapter employs an intersectional perspective in order to introduce a heightened awareness of the complexity of identity production. This perspective exposes how certain aspects of identity are brought to the foreground and become dominant in Bronze Age discourse, at the cost of other, equally important aspects that are pushed into the background. Intersectionality postulates that aspects of identity, such as class, gender, age, religion, sexual orientation, disabilities, and race, affect each together in such a way that they become intertwined and the total sum of them become greater than the sum of their parts (developed by Crenshaw 1989). In gender research, intersectionality has been used in particular to study the status of marginalized groups and how the interplay of different aspects of identity has led to a spiral of oppression (Crenshaw 1989; Cooper 2018). In the case of the Bronze Age women studied here, intersectionality is a useful tool to consider how the roles they had in life are expressed in different ways in the mortuary rites to which they were subjected, and how different aspects of their identities intersected and disproportionately affected their status, one way or another.

The aim of the chapter is to pull together the different aspects of the worlding that is manifested, expressed, and contrasted in two female graves from Jæren in south-western Norway — the Rege and Molkhaug mounds — with their hinterland of settled and farmed landscapes. In Bronze Age research, gender has most often been considered based on objects linked to men or women, found in burials and interpreted as ‘obvious’ manifestations of gendered roles (Sørensen 1997; Bergerbrant 2007; 2014; Bergerbrant and Wessmann 2018). By investigating two graves and the women buried in them, connections between the women, their grave goods, and their immediate surroundings as well as their distant networks are established. With their final resting place in large mounds, they belong to the group of Early Bronze Age individuals that were given monumental burials. These individuals have recently received renewed attention, thanks to new advances in scientific studies that reveal the individual lifeways of...
gendered beings based upon human remains (Frei and others 2015; Frei and others 2017b). Based on results so far, this has led to a renewed focus on mobility, which corresponds with the increased scrutiny of the mobility of the Bronze Age world at large discussed above. The mobility of women has been interpreted by some as a result of exogamy (Frei and others 2015), in which women are seen as the supreme gifts (for critique, see Bergerbrant and Wessmann 2018), exemplified by the recent study of the mobility patterns of the Skydstrup woman, believed to have left her homeland at the ‘age of marriageability’ (Frei and others 2017b). In this chapter, it is argued that potential exogamy would be but one imaginable aspect of the identity of these women.

The Women from Rege and Molkhaug – and Bronze Age Mounds

With the onset of the Early Bronze Age Period II (1500–1300 BCE) in Scandinavia, burials change from small and inconspicuous graves to large and monumental mounds with interred individuals, placed at prominent locations in the landscape (Myhre 1979; Larsen 1997; Nordenborg Myhre 1998; 2004; Syvertsen 2003; Austvoll 2019). Often, the mound is built upon a topographically high point, such as the top of a hill, which accentuates the monumentality. The construction of mounds was a massive undertaking and required manpower, materials, and infrastructure (Nordenborg Myhre 1998, 21). Many people must have come together to gather building materials in the form of turf, stone, and soil, and then transport these to the site, and finally construct the monument. Specialist knowledge of the lay of the land was needed in order to access appropriate materials, and knowledge of appropriate construction techniques was also required. The people needed to be housed and fed while they were making the mound. Master builders, cooks, farmers are some of the kinds of qualifications needed for this undertaking. In addition, several of the mounds have slabs with carvings as part of their cist, so carvers and ‘religious specialists’ were also needed to preside over the burial (Syvertsen 2003, 2005). Fifty-six earthen barrows and three cairns with finds dated to the Bronze Age are known from Jæren, although the real number is likely much higher, since several of these have been removed by modern development (Austvoll 2019, 22).

Despite having been excavated, the Rege mound is preserved in its original landscape where the flat heartlands of Jæren meet the sea. The mound is in itself a massive monument, with a 20 m diameter and height of 3 m; it is placed on a topographical high point in the landscape. Today it is an impressive looking visible feature in the landscape — it must have been even more so in the Bronze Age. Based on the artefact assemblage, it is dated to 1500–1300 BCE, Early Bronze Age Period II (Myhre 1979; Nordenborg Myhre 1998). The individual interred is assumed to be an adult woman, suggested by the composition of her grave goods (Bergerbrant 2014, 83). Unfortunately, organic material was not well preserved and had decayed prior to excavation, only a few bones were left of the woman and as such she cannot reveal events from her life — at least not based on current methodologies. Several well-preserved bronze objects were, however, found in their original position on the woman’s body (Myhre 1979) (see Fig. 19.1).

She wore fine bronze ornaments typical to the female costume and jewellery in the Early Bronze Age Period II: a collar, a large belt plate, a small tutu-lus, two bracelets, and a spiral-ended fibula. In addition, a dagger was placed on her hip (see Fig. 19.1). Metallurgical analyses done on the belt plate, bracelet, and dagger in her grave show that they originate from different batches of metal (Grandin, Hjärtnar-Holder, and Melheim 2015). In addition, some costume ornaments were found, among these small tubes that must have been fastened to a corded skirt (Engedal 2010), similar to those found in several of the Danish oak coffin graves such as the famous Egtved woman (Sørensen 1997; Kristiansen and Larsson 2005, 351), as well as depicted on the Late Bronze Age figurines from Faarup (Kjær 1927; Glob 1969, 191), and Grevensvænge (Glob 1969, 192–96).

No traces of a coffin were found, but she was interred in a chamber with rock art carved into one of the short-end slabs, decorated with sun symbols like spirals, circles, and cup marks (Syvertsen 2005). Her head was placed by the end slab. According to Goldhahn (2014, 100), some of the engraved figures on the slab echo the belt plate and its ornaments. The monumentality of the grave and the exceptionally rich grave goods puts her in the same league with other rich female graves with string skirts and a standardized set of jewellery and a dagger from southern Scandinavia. The combination of objects found in the burial exhibits a great likeness to those of the Egtved woman, since she was buried in an earthen mound and with remarkably similar grave goods (Armstrong Oma 2015), although the belt plate is similar to others found in hoards on Zealand (Engedal 2010, 75). The Rege woman and the Egtved woman both belong to the group of individuals found throughout the Nordic Bronze Age World who were buried in monumental mounds and interred with conspicuous grave goods.

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The Rege mound is one of several large mounds clustered in Jæren in Rogaland. In Period II, the majority of these mounds — eighteen — contained female burials, whereas seven contained male burials (Austvoll 2017, 426–27; for the distribution see Fig. 19.4). I will not discuss all of these here, but wish to draw attention to one of them, the Molkhaug mound, to the south of Rege in Klepp (see Fig. 19.2). Molkhaug was excavated by the archaeologist Egenæs Lund in the 1930s (Lund 1934). Because of this, we have more contextual information about this mound compared to many others that were excavated by farmers and treasure hunters in the 19th and early 20th century, who simply dug a hole in the middle of the mound. Two cists and a third structure made of slabs were found in the middle of the mound. Cist no. 2 contained a human skull and cremated human bones, mixed with periwinkles and calf, sheep, and dogteeth. Although the woman in this mound was not as richly equipped as the Rege woman, she was buried with a small tutulus and two fragments of bronze tubes that probably were fastened to a corded skirt. The human remains indicate that she was an adult. Pottery and raw flint were also found, and slabs in the grave were decorated with twenty-eight cup marks on the underside. The grave is ‘a hybrid mixture of maritime and pastoral references, and no
Figure 19.3. For the Bronze Age exhibition "Where do we come from?" at the Museum of Archaeology in Stavanger (curated by K. Armstrong Oma), artist Hege Vatnaland created this illustration to highlight the similarities between the Rege woman (left) and the Egtved woman (right) (figure reproduced with permission). The Rege mound as it appears today is seen in the background.
distinction has been made between human and animal bones’ (Nordenborg Myhre 2004, 90).

**Burials as a Nexus of Bronze Age Axis Mundi, Lived Landscapes and Research Discourse**

Beyond the mound as a monument in itself, the burials that the mounds contain stand at a nexus. By this I mean that they connect several constituent strands of Bronze Age research discourse and they represent different aspects of their contemporaneous Bronze Age worldings — the construction of the lifeworld. Regarding Bronze Age research discourse, the mounds and their burials are potentially informative regarding the individuals and their life story — their gender, status, grave goods, and the construction elements of the mound, preparation of the ground prior to construction, and even the ancient soil sealed under the mound. From the perspective of Early Bronze Age worldings, the mound reflects aspects pertaining to cosmology and the strategic furnishing of the landscape (see also Larsen 1997). The mounds themselves can be understood as reaching out to the sky and their surroundings, while concurrently they are locked into the earth, with the dark subterranean chamber embedding the grave in the bedrock, or in the underworld. A grave mound can be compared to a tree, where the top of the mound is the canopy, the branches, and the leaves, the body of the mound is like the trunk of the tree, and the bottom of the mound is the roots, communing with the deep places. As such, vertically it is the site of a shimmering portal, one that anchors simultaneously the here and the beyond where the underworld is brought up to its highest point. Horizontally, grave mounds form a nexus in the landscape, comprising crossroads that connect the paths travelled on land as well as by sea, farms, and rock art sites via visual sight lines (see also Nordenborg Myhre 2004). As such, they are highly visible mementoes of the interred dead and of the rituals that created the monuments, which in turn are a powerful manifestation of control in the landscape.

The mounds are also a nexus of the potent intersectionality of the individual lifeways of the people interred in them, and the potential mobility that a woman such as the one buried in the Rege mound represented. The mounds hold a dynamic tension between reaching out and withdrawing, between journeying and the place of origin — a tension between the supra-regional grand narrative Bronze Age and the local farm life. They represent an idealized cosmological framework that is made manifest in idealized gendered roles, represented by standardized costumes, ornaments, and daggers. The identities of those interred in such mounds are palimpsests of idealized gender roles created through movements in time-space, relating to these different paths as well as different scales of mobility.

**Homes — Farm Life and Settlement Patterns**

Fig. 19.2 maps the distribution of excavated settlement sites that were contemporaneous with the Rege burial, dating to the Bronze Age Period II–III, although more are found and excavated every year (Armstrong Oma 2018). The farms in the Early Bronze Age consisted of longhouses that vary somewhat in size; in the Late Neolithic and Early Bronze Age Period I, the houses are two-aisled. A shift happens with the transition to Period II, when a novel way of building results in three-aisled longhouses (Armstrong Oma 2018). This change in architecture is also observed in the rest of Northern Europe, reaching as far south as the Netherlands (Harding 2000). My interpretation of the Early Bronze Age longhouses in Rogaland is that altogether eleven out of sixteen have features that are consistent with indoor stalling of domestic animals. Based on finds of sheep coprolites in one house and faunal material, I have previously suggested (2018) that sheep were living in longhouses with humans, at least during parts of the year, likely during the lambing season. I have previously referred to the inhabitants of these houses as the sheep people, consisting of humans, sheep, and dogs living together in herding communities where a prominent mode of subsistence production was wool production (Armstrong Oma 2016; 2018). Wool was probably an important trade product in the Early Bronze Age of Europe (Frei and others 2017a). The transition from two-aisled to three-aisled houses is synchronous with other changes, both the beginning of the construction of large mounds in which individuals were interred, and landscape changes consistent with extensive grazing by flocks of animals (Hogestøl and Prøsch-Danielsen 2006).

These farms represent a significant, but somewhat under-studied area that holds great research potential in connection with burials. A one-sided focus on mobility will only ever reveal one side of a multifaceted story. I therefore suggest that the Bronze Age discourse would benefit from paying more attention to the intersections of gender, biography, and farm life. One way of doing that, given the lack of material culture found at the settlements themselves, is to try to make inferences about farm life from the
individual, gendered Bronze Age people that we encounter in burials. In the following, I will use the woman of the Rege mound as a nexus, in terms of thinking about the relationship between mobility and farm life, contrasting her with the woman found in the Molkhaug mound.

The Rege burial communicates; both as a beacon towards the sea in the west and south with its potential for maritime journeys, and as a monument to the rich farmlands of the east and the north. Standing on top of the mound provides a spectacular vista, over the North Sea and the flatlands of Jæren curving from the north to the south, as well as the mountains beyond the fjord far away to the east. During the construction of the mound, the builders would have seen farms scattered in the distance; Myklebust and Tjora in the north, Skeiane in the east, maybe even smoke from hearths curling up in the air, and the sounds and smells of the multi-species inhabitants on the farms. Turning their gaze to the sea, they might have seen ships approaching or leaving on the horizon. Similarly, the view of the sea together with seashells which were found scattered in the grave (Larsen 1997) also points to a maritime connection. Simultaneously, the Bronze Age farms of Kleppstemmen and Kvåle were not far from Molkhaug. The monumentality communicating towards the sea, as well as the maritime elements included in the construction of the mounds has been highlighted in Bronze Age research (Larsen 1997; Nordenborg Myhre 2004; Austvoll 2017; 2019), but the way the mounds are immersed in a settled farmland has received less attention. However, in a recent article, the land-use patterns of Early Bronze Age Jæren highlight the need to consider the full complexity of agro-pastoral economic strategies, social strategies, the ritual landscape represented by the distribution of mounds, as well as maritime mobility (Prøsch-Danielsen, Prescott, and Holst 2018). The Early Bronze Age mounds in the area are, in general, distributed where the settlements have been excavated (see Fig. 19.2), mainly in the present-day municipalities of Klepp and Sola — this includes the Rege and Molkhaug mounds.

Further Afield — The Rege Woman in an Extended Network

Considering the supra-regional network, the Egtved woman is a remarkable parallel to the Rege woman. She was buried about at the same time — maybe even within the same generation — and was interred with strikingly similar grave goods (Frei et al. 2015). The remains of the Rege woman, her costume, and burial goods are far from as well-preserved as of her more famous ‘sister’ in the Egtved mound, but based on their grave goods, their appearance must have been similar, as is the context of their burials (see Fig. 19.3).

In the following section the life world of this woman is considered based on both the recent results from contemporary female graves in Denmark, and also recent excavations of Early Bronze Age settlement sites in her local environment on Jæren, south-western Norway. Was she born on one of the local agricultural settlements? If so, what was her role in society? Or was she a stranger from a strange land, of the realm of mythical time-space that Helms (1988) refers to? If so, how did the local farmers and their society respond to this sphere? Can settlement archaeology answer these questions?

Recent research suggests that the Egtved woman may have travelled extensively, and may have been buried far from where she grew up. Based on geological baseline values, several places of origin have been excluded; remaining possibilities are the Black Forest region in south-western Germany (Frei and others 2015), or, based on her similarity with the Rege woman, it is possible she may have originated from somewhere in Norway, such as Rogaland (Armstrong Oma 2015). Cultural similarities between Rogaland and Jutland in the Bronze Age have been generally agreed upon during the last decades (Nordenborg Myhre 1998; Kvalo 2002; Engedal 2010; Hornstrup 2011; Bech and Rasmussen 2018). For example, the wetland area of Revheim in Rogaland is the only location in Norway where a pair of musical instruments, known as lurs, were found deposited in a bog, almost identical to pairs deposited in bogs in Denmark (Myhre 1979).

Origins aside, the fact that corded skirts appear in different contexts suggests they were part of a set costume possibly worn by particular members of society to signify their gendered role. They are sometimes referred to as part of a ritual costume (e.g. Kristiansen and Larson 2005). However, Bergerbrant’s (2014) study of the corded skirts in relation to the age, social status, and wealth in bronze of their bearers does not fully support an understanding of them as ritual garments; there is great diversity in the contexts in which they appear and they were worn by a range of women from different social categories. Bergerbrant’s (2014, 92) suggests that the evidence points towards ‘women wearing corded skirts belong[ing] to a category of people that had the right to be buried in mounds, since most of the graves are found in mounds’. Though the women buried in the Rege mound and the
Molkhaug mound differ significantly with regards to grave goods, they were both granted burials in massive mounds. It is important to keep in mind that these women were given a treatment in death that contrasts significantly with others — an example of which being the discovery of partial remains of a female skeleton, ‘the lady of the bog’ found in Håland, in Hå municipality, southern Jæren. Her remains, dated to the Early Bronze Age Period I, were uncovered in a bog that would have been a small pond in the Bronze Age (Kristoffersen 2016, 63). Her body was treated very differently to the Rege and Egtved women in death, pointing to the fact that being buried in a mound was not a given. Construction of the mounds would have been a considerable effort, bearing in mind factors like supplying materials, providing the labour, feeding the workers, and the loss of manual labour to other vital tasks as long as the construction lasted. And who were the mound-builders, where did they come from? Where did they live? Most likely they were the joint efforts of the local farming community.

Are then the rich female graves of Bronze Age Period II a microcosm that represents a macrocosm? Likely not if we consider the settlements nearby, where the woman was either a dweller or at least a guest. The grave lacks any kind of reference to the farm, in terms of life and activities on the farm, such as household subsistence and production. But if by macrocosm we mean Bronze Age cosmology, the grave is a manifestation of it, both regarding the spiral ornaments on her jewellery and, not least, the location of the mound at the highest point in the landscape, striving towards the sky. This dimension is enhanced by the slabs inside the chamber that were decorated with rock carvings of spirals and sun symbols (Syvertsen 2003; 2005). Interred in the chamber, we glimpse a woman with a special standing in society — labelled chieftess, a religious specialist, a yogi or an itinerant warrior princess?

This person is socially constructed as a gendered persona by objects that are clearly associated with womanhood, but that bear no relationship to farm life, household production, or subsistence activities. It is interesting that these aspects of life have no place in her identity construction and are not in any way associated with the construction of her gender. The closest link to the farm is her costume. The woman in Molkhaug is a contrast to the Rege woman in this regard, with her pottery, flint, and animal bones that point back to farm life, and even the sheep people, with the presence of sheep and dog remains mixed with the human bones. However, the dress ornaments belonging to string skirts is a common denominator of the women.

### Straddling Regions: Both Here and There

What can settlements add to our understanding of the Rege woman? Her grave goods are bronzes from southern Scandinavia and the continent, places that in Bronze Age Norway were possibly seen as the world beyond. These items therefore connected her to these foreign lands beyond the horizon, just as her string skirt made of wool, a costume made on the farm, connects her to the local area. But beyond the materiality of her garments, there are no material links between her grave goods and the farm. Granted, there are few objects found on Bronze Age settlements, mainly due to taphonomical factors and excavation methods.

By contrast, in Molkhaug, the pottery and flint discovered with the burial point to the farm, serving as a connection between the materiality of the farm and the burial. Likewise, the animal bones point towards both household subsistence and humans and animals as social agents both on the farm and in the otherworld. A common point of reference in these two graves are the wool garments, by way of bronze tubes fastened to string skirts; these connect the women with the Bronze Age farm, and the household practices and production that took place in the longhouse. Simultaneously, they represent a standardized costume with string skirts and blouse that had a wide distribution in the Nordic Bronze Age cultures (Bergerbrant 2014), pointing to mobility.

On the farm, there would be intimate encounters with living sheep, and members of the household would be engaged in activities such as herding, working with the fleece, consuming cheese, milk, and mutton, and also being clothed in sheep wool and skin. The Rege woman, in her symbolically significant garment made from sheep wool, is noteworthy as an individual with a special position in society — she was buried in a large mound, with exceptional bronze objects, and she was clothed in textiles made from wool, which attest to the value of sheep wool. Dressing in sheep wool is in one sense an act of embodiment, in which the sheep fleece becomes a second skin, enveloping the wearer in wool textiles. It is a tactile experience to feel, look, and smell like sheep. Animal products that wrap the body become integrated with the human body, and therefore the clothes and ornaments worn on the body are incorporated into a person (e.g. Viveiros de Castro 1998).

Wool was traded in exchange for precious bronzes, thereby contributing to mobility patterns and reaching beyond the home-sphere. An enhancement in the value of the sheep fleece would lead to a more complex and intimate relationship with the sheep as
the source of the fleece. The sheep themselves probably responded positively to the familiar look, smell, and feel of people clad in wool. From this perspective, sheep are subjects and producers, rather than objects, or products (Armstrong Oma 2018). From an intersectional perspective, this aspect of the Rege woman’s materiality represents a deep human-sheep entanglement that would be a meaningful layer of identity. This aspect of identity is local, intersecting with the generic Nordic Bronze Age poster-girl image of travelling women (see for example Frei et al 2015).

Even though everyone comes from somewhere, we will never know whether the women from Molkhaug and Rege were farmers belonging to the local community or if they were ‘blow-ins’, strangers from strange lands. Considering the grave goods, the Rege woman — with her bronze-rich grave goods and few links to farm life — seems more foreign than the Molkhaug woman. Their biographies might have been immersed in trajectories that were divergent, and they may have had identities which intersected in different ways. What is clear, however, is that they were both buried wearing string skirts in mounds. This act probably signifies that they were accepted and treated as members of the community. Therefore, when we consider the gendered identity of these women, we must also consider the life they were living as part of a local farm community, and their frames of existence.

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**20. Thy at the Crossroads**

* A Local Bronze Age Community's Role in a Macro-Economic System

**Introduction**

From 1600 BCE onwards, south Scandinavia became more closely linked to European trade networks, resulting in, from 1500 BCE onwards, a period of unparalleled creativity and the formation of a Nordic Bronze Age style based on stylistic influences from Mycenaean and central European workshops (Vandkilde 2014, 2016; Kristiansen and Suchowska-Ducke 2015). The change signalled the beginning of a period of unmatchted burial wealth between 1500–1100 BCE, when c. 50,000 barrows were constructed in Denmark alone (Holst and others 2013). More than 2000 swords are known from excavated burials and given that they constitute an estimated 10% of the total number of burials, 20,000 swords could have been deposited in total. Thy in the western Limfjord region, north-western Jutland, is among the regions with the most sword depositions currently known.

Thy has a strong presence in Nordic Bronze Age research, due to its burial wealth and well-researched settlement structure. Thy forms a maritime nodal point for North Sea travels; via the calm waters of the Limfjord to the east, Thy connects with Kattegat and the west coast of Sweden. The amber-rich North Sea coast to the west would have been the starting point for sea journeys to Norway in the north, to the rivers Elbe and Weser, and Ems and Rhine further south, and possibly also for travels across the North Sea to the United Kingdom. From a maritime point of view, Thy occupied a key position, one which entrepreneurial chiefs could exploit to their advantage as a potential bottleneck for both north-south and east-west maritime trade (Earle and others 2015; Skoglund 2017). In the following we will delve more deeply into the role of Thy in this wider interregional and international trade network, which brought not only goods, but also people to Thy. At the same time, the region also profited from beneficial agricultural conditions. Together these factors led to a remarkable increase in land-use and population during Periods II and III of the Nordic Bronze Age (1500–1100 BCE) (Bech and Hornstrup 2013; Bech and Rasmussen 2018; Kristiansen 2018a).

This chapter will trace the impact of this development from a local vantage point, using pollen diagrams, as well as isotopic data from humans and metals. By combining several datasets, we approach the history of a single individual: that of a non-local male who was buried at Jestrup in Sønderhå c. 1300–1100 BCE with local bronzes and a foreign Rixheim type sword made of copper from south Tyrol (Schauer 1971, Plate 115). We also explore how its geographical location enabled Thy to participate in a global economic system and establish long-distance trade relations which lasted for several hundred years. The complexity of the data set allows us to switch between large-scale patterns and individual life-stories. We wish to illuminate how a local community entered a ‘global’ economy, and how the sum of numerous individual travels ended up form-
ing a strong concentration of power in Thy between 1300–1100 BCE, potentially allowing it to profit from interactions with regions further away in both western Sweden and southern Norway. In the end, ecological overexploitation undermined sustainability, and Thy lost its leading position by 1100 BCE.

Thy in the Early Bronze Age

Demographic and Environmental Trends

During the Bronze Age, societies in Europe experienced a significant population increase, as evidenced in calculations that show a 40–50% increase between 2000–1500 BCE, with Europe's population then numbering at least 13 million (Müller 2015, 210). This trend seems to have continued during subsequent centuries, and some regions saw a much stronger demographic expansion, such as the Po region in northern Italy, and Thy peninsula in north-west Jutland. In both regions, the demographic expansion far superseded natural demographic increase, and may have been partly caused by people moving into the region from the outside. For Thy, this is demonstrated in Fig. 20.1, where an increase in barrow burials coincides with a peak in 14C-dates between 1250 and 1050 BCE.

Thus, the development from Period II to III is characterized not only by a growing number of burials, but also by a rising proportion of warrior burials with swords. From Period II (1500–1300 BCE) where one third of all burials had a sword, the frequency increased to almost every second burial in Period III (1300–1100 BCE). As no radical change in the proportion of male and female burials between Period II and III took place, we are no doubt dealing with an increase in population density, followed by a growing warrior presence. In addition, there is an increased number of heavily worn swords from Period II to III, interpreted as an indication of a beginning crisis (Kristiansen 2018a, figs 3.9 and 3.11). These trends are further substantiated by the evidence from environmental change (Fig. 20.2).

The vegetation development in Thy is unique in a Danish and north-western European context. Already during the Middle Neolithic open grass land becomes the dominating landscape feature, and in the beginning of the Bronze Age, woodland and trees in general become very sparse (Bech and Rasmussen 2018; Søgaard, Christensen, and Mortensen 2018). This development is in sharp contrast to most parts of the country where major forest clearance first appears during the Later Bronze Age (Rasmussen 2005). In order to examine the vegetation development in relation to human activity, we use a pollen record from Lake Ove, located in the southern part of Thy. The pollen record covers the time period from the late Mesolithic to the present day (Andersen 1995; Bech 2006).

In this chapter, the main focus will be on the period surrounding the Bronze Age and the changes in land use. For that purpose, we apply the REVEALS model (Regional Estimates of Vegetation Abundance from Large Sites) to the Lake Ove pollen record. The REVEALS model is used to overcome one of the main problems in pollen records: namely that the relationship between pollen and plant abundance is not straightforward. This is mainly due to differences in pollen production and dispersal between different plant taxa. REVEALS compensates for this difference and translates pollen percentage data into regional vegetation composition. The reconstruction achieved by the REVEALS model provide a much more accurate and quantitative estimate of the composition of regional vegetation (Sugita 2007; Nielsen and Odgaard 2010, Hjelle and others 2015, Theuerkauf and others 2016).

From the pollen diagram (Fig. 20.2) it is evident how the slash-and-burn agriculture of the Funnel Beaker Culture (c. 4000–2800 BCE) reduces the primary forest, while a secondary woodland of birch and hazel grows on the abandoned fields. The wood-
land clearances and the opening of the landscape accelerate rapidly during the Single Grave Culture (2800–2350 BCE) and the Late Neolithic (2350–1700 BCE). The reason for the marked changes is most likely found in a shift in agricultural land-use practice towards more permanent fields and grassed areas. The increased grassland also indicates that grazing animals became more important. In the Early Bronze Age around 1300 BCE, less than 10% of the land was covered by woodland, a figure that remains relatively constant until the late Iron Age. Of the remaining 10% of tree pollen, a substantial proportion is believed to be transported from areas outside Thy. Such a low proportion of local tree pollen indicates that the landscape was nearly treeless, probably with the exception of single trees protected from grazing by sea buckthorn shrubs and perhaps a few valued trees near the settlements and other protected areas. Open grassland was the dominant landscape type during the entire Bronze Age, reaching its height in the Early Bronze Age at more than 70% of the total land cover. Throughout the Bronze Age an increasing proportion of grassland developed into heathland, most likely due to an accelerating depletion and acidification of the soil, and the development of new land west of Lake Ove due to isostatic uplift.

Another potentially important factor are the many grave mounds erected during the Early Bronze Age. Vast areas of land were stripped in order to build the grave mounds, and the removal of sods had a positive effect on the development of heathland, especially on sandy soils (Kristiansen 2018a). Heathland is also a very important landscape type for winter grazing and may have been deliberately cultivated by burning of the landscape, which is well documented from western Jutland (Odgaard 1994). With a land cover of approximately 5%, cereal production remained relatively low during the Bronze Age.

The main features of the vegetation development inferred by the Lake Ove pollen record are supported by a pollen record from the nearby bog Hassinghuse Mose (Andersen 1993). The only major difference between the two pollen records is a marked regrowth of woodland in the Late Neolithic period and subsequent opening of the landscape. However, the pollen record from Hassinghuse Mose is derived from peat, and the pollen observed here is of a significantly more local origin. The difference between the two pollen records are therefore ascribed to local factors in Hassinghuse Mose and for that reason, the pollen record from Lake Ove should be preferred in conclusions regarding the regional vegetation development and land-use changes.

Interestingly, the pollen diagram suggests that Thy was nearly as deforested during the period of intense land-use and settlement (in some areas up to 2–3 farms per km²), as it was in historic times when no forest existed (Bech 2018). This could suggest that population figures during pre-industrial times
and the Early Bronze Age are comparable. A calculation carried out in a single well-surveyed district, comparing figures from 1800 CE with figures from the period 1500–1100 BCE, revealed that this was indeed the case (Kristiansen 2018a).

We will now take a closer look at some additional evidence in support of population growth, indicative of non-local immigrants who moved to Thy.

**Archaeological Indications of Migrants Settling in Thy**

We should expect that people migrated to Thy for various reasons. Perhaps as part of political and trade alliances, but perhaps also as a response to population pressure in other regions further south, and the attraction of new opportunities in the booming Thy economy. Apparently as a result of migration and contact with perhaps the Frisian Islands we find early examples of cremation in Period II (1500–1300 BCE), which are mainly women and children (Bech and Rasmussen 2018). The new ritual practice is likely to have come from the areas south of the Nordic realm, where urnfields appeared around 1300 BCE. Child cremations, such as the one found with an adult in the Egtved burial, should probably be seen as resulting from an accompanying child who died on the journey, and who was subsequently cremated in order to be carried to the final resting place. However, the proposal of travelling women can be further supported by foreign objects in female burials, such as glass beads and bronze ornaments. During Period II these objects point to lower Saxony, and during Period III to Mecklenburg (Bech and Rasmussen 2018).

Among the males, we might consider burials with pan-European swords as representing migrat-
ing warriors, as swords are highly personal. This is a possible interpretation in the case of Jestrup, to be discussed below. If accepted, how many male warrior migrants can be traced during Period II and III? And where did they originate from? Ten graves with pan-European sword types are documented in Thy during Period II (Bech and Rasmussen 2018), and five or six from Thy and Mors during Period III (Randsborg 1968). There are similarities in burial rituals with the Frisian islands, suggesting a maritime route connecting these regions. The fact that the area of Bjerre, which is located close to the North Sea has more European swords is supporting such a connection. During Period III, foreign dress pins support the continued importance of this maritime connection (Bech and Rasmussen 2018, fig. 2.28). Thy was, therefore, well connected during Periods II and III, and the maritime route towards the Frisian islands and further south remained of importance, while other areas contributed as well, most clearly lower Saxony and Mecklenburg.

In addition, there are well documented archaeological connections between Lista, Jæren, and Karmøy in south-west Norway, representing further movement from Jutland to Norway (Marstrander 1950; Prescott and Walderhaug 1995; Nordenborg Myhre 2004; Kvalø 2007; Østmo 2008; Prescott 2011, 2017; Hornstrup 2013; Prescott, Sand-Eriksen, and Austvoll 2018; Austvoll In Press).

Metal Stock in Thy 1500–1100 BCE: Trade and Political Expansion

As part of a large and comprehensive analytical program, eighteen copper alloys from Thy, dated to 1500–1100 BCE, were subjected to lead isotope and chemical analysis (Fig. 20.1a-c, for a description of methodology, see also Melheim and others 2018). All the sampled objects were selected from well-documented burial contexts (Aner and others 2001), with one exception, a sword from Sonderhå (Liversage 2000).

Six objects from Period II were analysed: a weapon palstave, a frame-hafted knife, and four typologically different sword blades. Interpretations of the copper’s provenance suggest a huge spread in the origin of the copper — ranging from Great Orme in Wales, the Alcudia-Linares ore region in Spain, to the Eastern Alp with Mitterberg in the Austrian Alps and the Alto-Adige-Trentino-Veneto ore fields in the Italian Alps. From Period III altogether twelve objects were analysed: six flange-hilted swords, two grip-plate swords, three ribbed bracelets and one full-hilted sword (two samples). In some cases, two objects were from the same burial context. With the exception of the blade of a sword from Sundby, interpreted as made of copper from Sardinia (or perhaps Slovakia) all metal analyses from Thy in Period III point towards the abovementioned ore fields in south Tyrol, Italian Alps. Arsenic and nickel impurities dominate (Fig. 20.3c).

Previously, metal with arsenic and nickel as the main impurities was thought to derive from a chalcopyrite source, and the Mitterberg copper mine in the Austrian Alps was the prime suspect. New data from Great Orme in Wales has demonstrated that arsenic-nickel copper could well have been produced from the oxidized malachite-goethite ores (Williams 2017, 2018). Among the analysed Thy bronzes, the Period II sword from Sønderhå matches the Great Orme copper. A comparison between the Period III bronzes and lead isotope data from Mitterberg, Slovakia, and the Italian Alps, shows that the latter is the most feasible source in this period.

Interestingly, the analysed metalwork can provide information about one family’s access to metal. In one case, metal from two burials within the same barrow was analysed — a barrow in Egshvile, Vester-Vandet, containing five burials: a) an Early Bronze Age child urn burial, b) a Period II female urn burial, c) a Period III male cremation burial, d) an undated cremation burial and e) a Late Bronze Age urn burial (Olsen 1992; Bech and Rasmussen 2018). The late Period II knife comes from Burial B, an urn grave with the cremated remains of a female. This burial also contained a bronze fibula, a bronze arm ring, a bracelet with bronze spirals, glass beads, and a bead of deer antler, as well as a miniature pot, two awls (with wooden handles), and resin from a small box of organic material (Aner and others 2001, pl. 37–39, figs 55, 57). The metal of the tanged knife is interpreted as coming from south Tyrol. This is one of two Period II objects with copper identified as Italian. The sword with a scabbard comes from Burial C, a stone cist burial with the cremated remains of a male, which also contained a bronze fibula, a metal-hilted knife, a bronze double button, and gold spirals (Aner and others 2001, pls 37–39, figs 55, 58, 59). The metal of the moderately re-sharpened flange-hilted sword with a broken point, which had the remains of an antler at the grip and a preserved scabbard of wood and leather, is interpreted as coming from the same area of origin as the somewhat earlier knife in Burial B.

The burials are representative of a prominent group with glass beads, amber, and goldwork. Recent provenance studies of the glass beads suggest that
the majority originated in Egypt and Mesopotamia (Varberg, Gratuze, and Kaul 2015; Varberg and others 2016). The concurrence of glass beads and amber beads in Nordic Early Bronze Age elite burials is indicative of exchange-based relations between these areas, which may have depended on travel across the Italian Alps (Kaul 2018; cf. Angelini and Bellintani 2005, 2017).

Recent calculations of the yearly amount of copper needed to replace wear and loss during this period in Denmark suggested a minimum amount of one metric ton (Radivojević and others 2018). What kind of political organization is behind long-distance metal trade of such size? In order to answer this, we will now consider a well-analysed burial where isotopic evidence and metal analysis can detail the more general picture drawn above.

Some Isotopic Indications of Migrants

A male buried in a stone cist in a barrow at Jestrup (Fig. 20.4) dated to the beginning of Period III, around 1300 BCE, is indicative of the community’s and perhaps individual trade relations of the time.¹ He was buried with a Nordic bow fibula, a bronze double button, and a most likely imported grip-plate sword (Aner and others 2001, 33–34, pl. 19, figs 16a–b). The sword belongs to the Rixheim type which has an assumed origin in present-day Switzerland (Schauer 1971, pl. 115).

The metal of the Jestrup sword is quite typical for the period not just in Thy but throughout Northern Europe, with arsenic and nickel as main impurities and otherwise only minor traces of other elements (but Pb at 0.21%) (Liversage 2000, 14–17). The tin content of the sword is quite high, at 13.10%, which is not unusual for this period in the Nordic realm although tin contents decrease slightly from Period II to III (Liversage 2000, 22, 79; Bunnefeld 2016a). Similarly, high tin contents are present in other Period III Thy swords.

South Tyrol is pinpointed as the most likely source of the copper, and the sword type originates just north of the Italian Alps, suggesting a close geographical match between copper sources and sword type (Schauer 1971, Plate 115). As we saw from the discussion of metal provenance above, while Period II in the Thy region is characterized by a wider range of potential source areas, Period III is completely dominated by copper coming from one source area, matching ore bodies in south Tyrol in the Italian Alps. The Jestrup sword fits neatly into this picture, being a local sword from the Alpine region and cast with the dominant copper type from Italy in South Scandinavia. How does the archaeological and lead isotope evidence correspond with the strontium isotopic evidence?

The origin of the Jestrup individual was recently investigated as part of a large study that aimed at tracing potential individual human mobility during the third and second millennium BCE in Denmark (Frei and others 2019). The study by Frei and others is based on strontium isotopic analyses performed in

¹ A previous investigation by van der Sluis (2017) yielded a radiocarbon date for this individual (sample from the femur) Lim-hb-143, UBA-31283 BP, 3114 ± 40, C13–19.9, 1455–1269 cal BCE, which seems to be in concordance with the typological date that place the burial to the beginning of Period III, albeit a bit earlier than expected (Period III starts around 1300 BCE or a little earlier in some regions).
more than eighty individuals buried in thirty-seven different localities within present-day Denmark. The samples comprise diverse burial types and include males and females of various ages as well as children, all dating back to the third and second millennium BCE. Within this study, several individuals buried at Thy were investigated including the Jestrup individual. The Thy area is special in terms of its strontium isotope bioavailable baseline as it lies within the Limfjord region which yields the lowest baseline values found within present-day Denmark, with signatures as low as $^{87}$Sr/$^{86}$Sr $\approx$ 0.708 (Frei and Frei 2011, 2013). The low values of the baseline within the Limfjord region are most probably because the area is characterized by predominantly Upper Cretaceous to Lower Tertiary carbonates with additional outcrops of Eocene and Oligocene volcanic ash layers. Both these lithologies exhibit low strontium isotopic values which might have influenced the $^{87}$Sr/$^{86}$Sr ratios of local surface waters (Frei and Frei 2011). The bioavailable baseline for present-day Denmark has previously been characterized by strontium isotope analyses of 192 surface waters (lakes, creeks) and signatures range from $^{87}$Sr/$^{86}$Sr $= 0.7081$ to 0.7111 (Frei and Frei 2011). Additionally, results from a number of supplementary baseline samples from amongst other plant, water, and soil extracts from different areas within Denmark have since been added, all falling within the before mentioned baseline range (e.g. Frei and others 2009; Price and others 2011; Frei, Pentz, and Larsen 2014; Frei and others 2015b; Frei and others 2017; Hoogewerff and others 2019; Frei, Frei and Jessen 2020). Only the Danish island of Bornholm (located south of Sweden in the Baltic Sea) revealed elevated bioavailable strontium isotope signatures ($^{87}$Sr/$^{86}$Sr $> 0.711$), and this is due to the contribution of radiogenic Sr from the Precambrian basement which dominates most of the island (Frei and Frei 2013). For this reason, when we herein refer to the baseline for ‘present-day Denmark’, we exclude the area of Bornholm, unless otherwise stated. Furthermore, in contrast to other regions with larger bioavailable baseline variations (broader ranges) like in some areas of Norway and Sweden (Blank and others 2018; Hoogewerff and others 2019), the bioavailable baseline that characterizes most of present-day Denmark seems to be isotopically rather homogenous (Frei, Frei and Jessen 2020). Consequently, it is often only possible to identify long-distance mobility (i.e. in this case mobility outside present-day Denmark).

The strontium isotope analyses conducted on tooth enamel from the Jestrup individual yielded a strontium isotopic signature that lies above the baseline for present-day Denmark, indicating that this individual was of non-local provenance (Frei and others 2019). The Jestrup individual’s Sr isotopic signature can originate from several areas within Europe, the closest seems to be southern Sweden, the island of Bornholm, Central Germany, and some areas of the United Kingdom. However, areas within other parts of Europe are also potential candidates. Future, more detailed, baseline studies of Europe might shed light on the origin of this individual.

If we accept that the Jestrup individual was an immigrant to Thy, a possible conclusion regarding the provenance of the metalwork found in his burial is that he brought the foreign sword with him when he arrived in present-day Denmark and acquired the fibula and the double button locally. Perhaps he was even directly involved in the copper trade, as a warrior coming from an area with established trade connections with south Tyrol. This is based on the notion that swords and fighting styles are highly personal. Nordic warriors preferred either Nordic full-hilted swords, or flange-hilted swords. The very few Rixheim type swords in Denmark are therefore most likely linked to foreign traders/warriors. It is possible that the Jestrup male travelled to Thy as a warrior protecting one of the copper transports, and unlike most of his contemporaries decided to settle in the distant north rather than return.

**From Period II to Period III: Warfare and the Centralization of Power**

We can observe a significant increase in the number of burials with swords from Period II to III (c. 1300 BCE), with simultaneously flange-hilted warrior swords becoming more numerous. All these are indications of a situation of intense warfare (Kristiansen 2018a, 122 fig. 3.8, 123 fig. 3.9). The production of full-hilted swords becomes more standardized in Period III, suggesting fewer workshops and a higher degree of interaction between chiefly lineages (Bunnefeld 2016b). In Thy, the concentration of wealth in central regions suggests that a centralisation of power took place, where several local chieftoms had been replaced by a large ‘super chieftdom’ encompassing not only Thy but also the island of Mors and surrounding regions. In this region, we also find a concentration of gold finds (Broholm 1944, fig. 65). The concentration of wealth would have allowed the chief to increase tribute, enabling him to organize trade expeditions and expeditions of conquest to control distant regions in south Norway and Bohuslån in order to secure raw materials and perhaps captives. Such a model was recently presented by Ling, Earle and Kristiansen (2018) in order to explain the concentration of wealth...
in Thy during this period, but also in order to highlight the similarities between the Viking Age and the Bronze Age. Both periods, it is argued, represented an expansive ‘Maritime Mode of Production’ that converted population surplus into trading, raiding, and colonizing ventures through maritime expansion (Bech and others 2018).

Period III (1300–1100 BCE) represented a period of centralization and militarization, perhaps best exemplified by the Tollense battle in Mecklenburg. Taking place at some time between 1300–1250 BCE, this involved at least two thousand warriors with diverse origins according to strontium values (Price and others 2019). It very likely represents an attempt at foreign conquest from Central Europe to control trade, and perhaps also an attempt to take over the fertile region of Mecklenburg controlled by the Nordic chiefs. These early attempts at political centralization and interregional warfare created a temporary decline in supplies of copper and tin, as existing trade confederacies collapsed in their wake (Kristiansen 2018b). We see this exemplified in the increased use-wear on full-hilted swords across south Scandinavia, as well as in the slightly declining tin content in swords from period III compared to Period II (Bunnefeld 2016a, fig. 23, 86 fig. 35). The beginning of Period III likely represented the very peak of Thy as an economic and political power in control of the northern area of a north-west European trade system.

Two Triangular Trade Systems with Thy as the Bottleneck

Scandinavian Peninsula

How was trade organized and which routes were taken by Bronze Age travellers to and from Thy? To begin with, we need to realize that many of the Bronze Age coastal landscapes of north-west Europe south of the Scandinavian Peninsula are now submerged by the continuous, slow land depression occurring in tandem with erosion caused by strong North Sea waves. We can observe glimpses of this rich coastal Bronze Age landscape in the island of Sild and at Bjerre in Thy, and the important barrow communication lines which lead towards the west coast in Jutland (Johansen, Laursen, and Holst 2004). Thus, we envisage that a maritime network connected Thy with north-west Europe down to the modern Netherlands, as we can observe similarities in both settlement types and metalwork (Bech and Rasmussen 2018). Likewise, there were connections to south-western Norway, as well as Bohuslän in western Sweden and the Oslofjord region in Norway, starting in the Late Neolithic c. 2350 BCE (Apel 2001). Thy held a pivotal position in connecting these two trading systems, which was supported by population movements and colonization.

There is much to suggest that populations from Thy and northern Jutland settled in these regions, leading to the opening of landscapes similar to Thy (Prøsch-Danielsen and Simonsen 2000; Prøsch-Danielsen, Prescott, and Holst 2018). These migrations may have formed the backbone of the flourishing of the Bronze Age kin alliances and trade networks culminating during Period III. However, the lack of access to good building timber during the Early Bronze Age in Thy would have been an obstacle to the construction of seagoing ships. Here it seems that the economic and political power of Thy enabled control of the trade networks in the Kattegat-Skagerrak region, networks that also connected the timber-rich Oslofjord-Bohuslän region and south-western Norway with Thy. This system connected to a similar maritime network that brought copper and tin north in exchange for amber collected along the Thy North Sea coast.

The North-Western European Continent

The connection of Denmark/Thy to the Atlantic copper trade networks has been discussed elsewhere (Melheim and others 2018b). We focus here on another transportation route. Along the west coast of Jutland, we see the contours of a seaborne trading system in the coastal distribution of similar types of bronzes (Randsborg 1968, figs 12, 14 and 20), which included both south German Tumulus Culture types moving north and Nordic types moving south. At the same time, a land-based system extended the whole way down to north Germany/Lüneburg and the Elbe (Bergerbrant 2007, figs 79–82; Randsborg 1968, fig. 36). We propose that this system was linked to a triangular system of waterborne trade that connected Jutland/Thy with south German Tumulus Culture groups who provided copper, and from there to southern England where tin was obtained. This is supported by the following observations: from the coastal communities of Jutland and north-western Germany (Bergerbrant 2007), the Weser river leads directly down to one of the centres of the Tumulus Culture with rich Middle Bronze Age burials, often containing elaborate necklaces made from Baltic amber (Kristiansen and Suchowska-Ducke 2015, fig. 1; Woltermann 2016). This was collected along the coast of Jutland bordering the North Sea, and at Thy we found a small amber hoard deposited under the floor of a house from around 1350 BCE, close to the coast (Earle 2018, 375–76).
As pointed out above, from around 1500 BCE the Italian eastern Alps dominate in providing a new source of copper to Scandinavia (Melheim and others 2018a). The rich copper ores of the Alto-Adige-Trentino-Veneto ore fields in south Tyrol (Artioli and others 2016), provided most of the copper employed in swords from south Germany to Norway (Ling and others 2019), followed by Slovakian and east Alpine ore deposits. Traders from the Italian Alps would have traded copper north to the south German Tumulus Culture (Mordant and Saligny 2007). Northern Italy with the Terramare Culture was also a hub linking the European trade networks to the west Mediterranean/Mycenaean trade network that provided, among other things, glass beads in exchange for amber (Kaul and Varberg 2017; Kaul 2018).

Thirdly, as tin sources were located in Cornwall in southern England (Pernicka 2010), we should therefore expect an exchange of tin for copper. The Rhine could have been an important route for the metal traders in the Bronze Age, leading more or less from the Alpine copper sources in the south to the tin sources in England. Further support for the use of the Rhine route comes from the isotopic evidence showing that England also obtained some of its copper from the Italian Alps after 1500 BCE, even if copper from Great Orme was still being used (cf. Rohl and Needham 1998).

Based on these observations, we suggest a triangular trade system in which amber was traded south by Nordic traders/warriors using octagonally-hilted and flange-hilted swords of international type, shared from central Europe to south Scandinavia (Fig. 20.5). In southern Germany they traded amber for copper, which they brought to the British Isles along the Rhine route, where they exchanged copper for tin, before returning home across the channel. A key question is how far did the traders travel, whether from Denmark, southern Germany, or the British Isles?

In such a scenario, traders/warriors and accompanying persons, such as young girls like Egtved and Skrydstrup (Frei and others 2015a; Frei and others 2017), perhaps intended for marriage with distant trading partners in the north, would have travelled counter-clockwise in a triangle movement of the maritime groups from different locations in Scandinavia. After reaching Denmark, they would have travelled either through the Limfjord area or the Hedeby passage in the south, setting out on the North Sea and moving down the Weser, covering a short distance overland at the end of Weser to the River Main, following this westward to the Rhine, and from the Rhine to the North Sea over to England, and then from England over the North Sea back to Scandinavia. On such a route they might have traded Baltic amber with the southern Tumulus groups against copper from the Italian Alps and used this copper to trade tin and perhaps even gold with groups from England. Or was the Rhine route only used by traders from the Tumulus culture and traders from England? Perhaps the Scandinavians primarily travelled along the North Sea coast, meeting up with Tumulus mediators at the mouth of the Weser, and with traders from England at islands such as Thanet by the North Sea in order to get the metals? This latter scenario is supported by the archaeological evidence of foreign objects in Thy burials (Bech and Rasmussen 2018). But people from Thy likewise travelled north towards south-eastern Norway and Jæren, where we do find burials with clear Danish parallels and a similar environmental history (Hornstrup 2013; Prescott, Sand-Eriksen, and Austvoll 2018; Prøsch-Danielsen, Prescott, and Holst 2018). Thus, during a few hundred years between 1500–1100 BCE, but especially between 1300 and 1100 BCE, Thy emerged as a centre of political alliances, trade, and small-scale population movements between north-western Europe and south-western Scandinavia (Ling, Earle, and Kristiansen 2018).
Conclusion

We began by arguing that the male buried at Jestrup was a warrior who came to Thy with a Rixheim sword. By combining archaeological sword typologies with strontium and lead isotopes, we are starting to see the possibilities of how data from scientific analysis in tandem with traditional archaeological analysis enables us to link individual life-stories with the grand archaeological narrative.

We have illustrated how Thy, a local region in north-western Jutland became an important node in an expanding trade network during the period between 1500–1100 BCE, which also attracted people from the south in north-west Germany, and perhaps also from surrounding regions. Trade and demographic/settlement expansion thus went hand in hand creating treeless landscapes from the Frisian island in the south to south-western Norway in the north. During its peak it created a strong maritime power in Thy, situated between a Scandinavian and a north-west European trade system, which it was able to link together for a period of some 400 years. In the end, this demographic expansion and environmental exploitation superseded carrying capacity and became unsustainable.

Acknowledgements

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