This pdf of your paper in *North Meets South* belongs to the publishers Oxbow Books and it is their copyright.

As author you are licenced to make up to 50 offprints from it, but beyond that you may not publish it on the World Wide Web until three years from publication (October 2020), unless the site is a limited access intranet (password protected). If you have queries about this please contact the editorial department at Oxbow Books (editorial@oxbowbooks.com).

#### AN OFFPRINT FROM

Swedish Rock Art Series: Volume 6

### North Meets South

# Theoretical Aspects on the Northern and Southern Rock Art Traditions in Scandinavia

#### Edited by

# Peter Skoglund, Johan Ling & Ulf Bertilsson

Hardback Edition: ISBN 978-1-78570-820-6 Digital Edition: ISBN 978-1-78570-821-3 (epub)



© Oxbow Books 2017 Oxford & Philadelphia www.oxbowbooks.com Published in the United Kingdom in 2017 by OXBOW BOOKS The Old Music Hall, 106–108 Cowley Road, Oxford OX4 1JE

The Old Music Hall, 106–108 Cowley Road, Oxford Ox4 1J.

and in the United States by OXBOW BOOKS 1950 Lawrence Road, Havertown, PA 19083

© Oxbow Books and the individual authors 2017

Hardback Edition: ISBN 978-1-78570-820-6 Digital Edition: ISBN 978-1-78570-821-3 (epub)

A CIP record for this book is available from the British Library and the Library of Congress

Printed in Malta by Melita Press

For a complete list of Oxbow titles, please contact:

UNITED KINGDOM Oxbow Books

Telephone (01865) 241249 Email: oxbow@oxbowbooks.com

www. oxbowbooks. com

UNITED STATES OF AMERICA

Oxbow Books

Telephone (800) 791-9354, Fax (610) 853-9146 Email: queries@casemateacademic.com

www.casemateacademic.com/oxbow

Oxbow Books is part of the Casemate Group

Front cover: Rock paintings at Cuttle Lake, Western Ontario, Canada (after G. Rajnovich); and rock paintings at River Olekma, Eastern Siberia (after P. Okladnikov and A. I. Mazin).

#### **Swedish Rock Art Series**

Bronze Age rock art represents a unique Nordic contribution to world culture, and more than 17,000 localities are known in Sweden alone. They constitute one of the World's most complex and well-preserved imageries. Centered in the World Heritage site of Tanum in western Sweden, the Swedish Rock Art Research Archives (Svenskt Hällristnings Forsknings Arkiv – SHFA), at the University of Gothenburg was established in 2006 to further documentation and research on this unique Bronze Age heritage. All original documentation – from large rubbings to photos are being digitized and along with modern digital documentations made continuously accessible for international research on the web portal www.shfa.se. Based on this material Swedish Rock Art Series will present ongoing research and new documentation in the years to come.

Kristian Kristiansen Series editor Johan Ling Director SHFA

#### The Swedish Rock Art Series:

Swedish Rock Art Series 1: Rock art and seascapes in Uppland *Johan Ling* 

Swedish Rock Art Series 2: Elevated rock art: towards a maritime understanding of Bronze Age rock art in northern Bohuslän, Sweden *Johan Ling* 

Swedish Rock Art Series 3: Picturing the Bronze Age Peter Skoglund, Johan Ling and Ulf Bertilsson (eds)

Swedish Rock Art Series 4: Rock art and coastal change in Bronze Age Scandinavia. Encountering imagery – materialities, perceptions, relations Courtney Nimura

Swedish Rock Art Series 5: Rock art through time. Scanian rock art in the Bronze Age and earliest Iron Age

\*Peter Skoglund\*\*

Swedish Rock Art Series 6: North meets south. Theoretical aspects on the northern and southern rock art traditions in Scandinavia

Peter Skoglund, Johan Ling and Ulf Bertilsson (eds)

# Contents

List of contributors Introduction		vi vii
1.	The Meaning and Use(-Fulness) of Traditions in Scandinavian Rock Art Research Trond Klungseth Lødøen	1
2.	Where Styles Meet - What Does it Mean? Heidrun Stebergløkken	35
3.	Taking the Stranger on Board - The Two Maritime Legacies of Bronze Age Rock Art Lene Melheim and Johan Ling	59
4.	Nämforsen – A Northern Rock Art Metropolis with Southern Pretences Ulf Bertilsson	87
5.	A Boat Journey in Rock Art 'from the Bronze Age to the Stone Age – from the Stone Age to the Bronze Age' in Northernmost Europe Jan Magne Gjerde	113
6.	The Circumpolar Context of the 'Sun Ship' Motif in South Scandinavian Rock Art Antti Lahelma	144
7.	The Xenia Concept of Guest-friendship - Providing an Elucidatory Model for Bronze Age Communication Flemming Kaul	172
8.	Axes and Long-distance Trade – Scania and Wessex in the Early Second Millennium BC	199

# List of contributors

ULF BERTILSSON
Swedish Rock Art Research Archives (SHFA)
University of Gothenburg
Department of Historical Studies,
Archaeology
P.O. Box 100
S-405 30 Gothenburg, Sweden
ulf@shfa.se

JAN MAGNE GJERDE
Department of Archaeology, History,
Religious Studies and Theology
UiT – The Arctic University of Norway
Postboks 6050 Langnes
9037 Tromsø, Norway
jan.magne.gjerde@uit.no

FLEMMING KAUL
The National Museum of Denmark
Ancient Cultures of Denmark and the
Mediterranean
Frederiksholms Kanal 12
DK-1220 Copenhagen K., Denmark
Flemming.Kaul@natmus.dk

Antti Lahelma
Institute of Archaeology
Department of Philosophy,
History, Culture and Art Studies
University of Helsinki
P.O. Box 59
00014 University of Helsinki, Finland
antti.lahelma@helsinki.fi

JOHAN LING
Swedish Rock Art Research Archives (SHFA)
University of Gothenburg
Department of Historical Studies,
Archaeology
P.O. Box 100
S-405 30 Gothenburg, Sweden
johan.ling@archaeology.gu.se

TROND LØDØEN
Section for Cultural Heritage Management
University Museum of Bergen
P.O. Box 7800
5020 Bergen, Norway
trond.lodoen@uib.no

Anne Lene Melheim Museum of Cultural History, Department of Archaeology University of Oslo P.O. Box 6762 St. Olavs plass 0130 Oslo, Norway a.l.melheim@khm.uio.no

PETER SKOGLUND Linnaeus University Department of Cultural Sciences, Archaeology 391 82 Kalmar, Sweden peter.m.skoglund@lnu.se

HEIDRUN STEBERGLØKKEN NTNU Vitenskapsmuseet 7491 Trondheim, Norway heidrun.steberglokken@ntnu.no

# Introduction

#### Peter Skoglund and Johan Ling

The Swedish Rock Art Research Archives (SHFA) were established in 2006 as an infrastructure to further documentation and research on Swedish rock art. The archive, which is part of the University of Gothenburg, aims to store and present existing rock art documentation for public and research.

SHFA is also a research institute promoting research on rock art in Scandinavia and beyond. The archive publishes the Swedish Rock Art Series, aiming to present research on Scandinavian rock art to an international audience. An initiative to facilitate and strengthen this process is to arrange international symposia targeting Bronze Age imagery.

The current volume, which is number 6 in the series, is the outcome of the second international symposium under the heading *North meets South* held in Tanum, Sweden, 21–23 October 2014. The title of the volume, *North meets South. Theoretical aspects on the northern and southern rock art traditions in Scandinavia*, was chosen to put a focus on Scandinavian rock art regardless of regions and traditions.

There has been a tendency in rock art research to merely focus on either the Northern Tradition (NT) or the Southern Tradition (ST) of rock art and there is a need to broaden the discussion. Thus, the aim of this symposium was to stimulate different perspectives and themes that focused on the intersection between these traditions.

However, it is important to stress that there are obvious differences in space and time regarding these two traditions. Yet there are also some features and formats in common in time and space, and a significant theme of the conference was to highlight the interaction between these rock art traditions. Various aspects of this theme are reflected in this publication, which gathers nine researchers from four different countries (Norway, Sweden, Denmark and Finland).

The papers presented in this volume fall into two broad categories. There are papers dealing with issues concerning categorization and style – *i.e.* presupposed concepts that shape the way we comprehend data and organize the material in various traditions (Lødøen, Stebergløkken). There are also papers taking their starting point in the images themselves, trying to elucidate possible influences and interaction between different regions and rock art traditions (Bertilsson Kaul, Melheim and Ling, Skoglund, Gerde, Lahelma).

In his paper, *Trond Lødøen* questions the still predominant tendency to categorize Scandinavian rock art into just two traditions, associated with hunting societies on the one hand and farming societies on the other. Using the Norwegian material, Lødøen discusses a number of aspects associated with this categorization. He questions both the background for the separation exclusively into these two traditions and the possible interaction between them, and argues in favour of a much more developed and nuanced classification of the still expanding bulk of rock art. Furthermore, Lødøen argues that the standard categorization into two major traditions has hindered researchers from discussing other possible interconnections such as similarities between rock art in western Norway and rock art in southern Europe reflecting possible interconnections across the Atlantic.

An interesting characteristic of central Norway is the meeting between the Northern and the Southern Traditions. In this region, the different traditions coexist not just in this macro-perspective, but also side by side at the same sites – occasionally even in the same panels. The region is a perfect setting to study the interaction between the two traditions. Based on a thorough definition of style and type, *Heidrunn Stebergløkken* identifies various sub-groups in the material and argues that meetings between various socio-cultural groups actually took place at least at some of the locales in central Norway.

Lene Melheim and Johan Ling argue that the strong maritime focus in south Scandinavian Bronze Age rock art could be seen as a fusion of two different maritime legacies. The first legacy relates to the north Scandinavian huntergatherer tradition of making rock art at maritime locations in the landscape and the second major impact relates to Bell Beaker influence in southern Scandinavia. By incorporating two different maritime legacies on both a practical and a symbolic level, the societies in southern Scandinavia created new

maritime institutions which enabled them to enter and participate actively in the maritime exchange networks of the Nordic Bronze Age. The authors regard the institutionalization of this particular kind of maritime-ness as a crucial feature, a doxa for the reproduction of the Nordic Bronze Age societies.

Ulf Bertilsson focus on the rock carvings at Nämforsen. Although some researchers have pointed to similarities to the Southern Tradition, the notion that the carvings belong to the Stone Age and the northern hunting and trapping culture is firmly established. A difficulty then rises from the fact that the two adjacent settlements, Ställverket and Råinget, were most intensively settled in the Bronze Age i.e. after the period carvings are considered to have occurred. Moreover, bronze casting was done at Råinget. The coastal burial cairns from the Bronze Age largely contemporary with these settlements may also be connected to the carvings. A special type of manned ships resembling the SN Nag type occurs in 'strategic positions'. The explanation for these phenomena is the advancing Bell Beaker culture that also left its mark in the form of a very typical flint arrowhead at Ställverket, indicating that the area was drawn into a growing network of trade and exchange in the Bronze Age.

Jan Magne Gjerde takes boat typology as a starting point for his essay, which compares boat images from the Northern and Southern Traditions. Traditionally, the history of research on rock art in Scandinavia has a clear division between the (northern) hunter and the (southern) agrarian rock art traditions. In light of new discoveries of boat motifs in northern Scandinavia this paper argues that new data call for a re-evaluation of the strict divisions based on the economy, geography and time of the boat motif. This paper proceeds from the Stone Age boat depictions in northernmost Europe and is an attempt to nuance this strict north-south division and point out some possible relations between the two traditions.

In his paper, *Antti Lahelma* concludes that even though the southern and northern rock art traditions partially overlap in both space and time, and show some evidence of communication and interaction, the scholarly traditions rarely do, but tend to interpret each type of rock art according to models that seem oblivious to each other. This paper examines the 'sun ship' in the context of the northern Scandinavian 'hunter' rock art. Russian and North American scholars have pointed out parallels to the same motif also in the rock art of other regions of the northern circumpolar zone. However,

scholars studying the Southern Tradition have associated this motif with elements of Indo-European mythology, and its roots have been traced to the Mediterranean world and Ancient Egypt. By discussing and comparing these different models Lahelma points out the danger of being too restricted to only one research model or one geographic area.

Flemming Kaul take his starting point in the rich evidence of long-distance exchange and communication between southern Scandinavia and examines the possible influences between southern Scandinavian rock art and the Mediterranean. Kaul's paper asks what kinds of mechanisms made these connections possible. He argues that the ancient Greek (and Homeric) concept of guest-friendship, xenia, may give us an idea of those social mechanisms that would make the transportation of people and goods practically feasible. This concept can also be used to understand the long-distance connections, which seem to be reflected by specific shapes or types of ships in Late Bronze Age rock carvings – from Alta in northernmost Norway to Bottna in central Bohuslän – could be understood in terms of the xenia concept. Here, well-established guest-friendship connections would make long-distance maritime journeys possible.

Peter Skoglund discusses the occurrence of axe images at Simrishamn in Scania and at Stonehenge in Wessex, all of which can be dated to the Arreton phase/Montelius' period 1, 1750/1700–1500 BC. These two concentrations are the only major clusters of axe images in northern Europe dating to this time, and some of the images demonstrate similarities in style and design. In order to understand this situation, an interpretation is put forward implying that these two areas were linked by a network of people who traded in metal and amber. The function and value of amber and metal was, however, different in the two areas. It is argued that differences in the conceptualization of metal are reflected in the ways axe images are arranged and displayed in Wessex and in Scania.

A major conclusion to be drawn from the symposium is the great complexity and variation of rock art in Scandinavia and the need for a perspective comparing various regions in Europe and beyond. By bringing together scholars from various parts of Scandinavia, and publishing the contributions in this volume, we hope we have been able to demonstrate the potential for further research along these paths.

### Chapter 3

# Taking the Stranger on Board – The Two Maritime Legacies of Bronze Age Rock Art

Lene Melheim and Johan Ling

**Abstract:** In this chapter, we argue that the strong maritime focus in South Scandinavian Bronze Age rock art could be seen as the result of a fusion of two different maritime legacies. The first legacy relates to the North Scandinavian hunter-gatherer tradition of making rock art at maritime locations in the landscape, in connection with seasonal gatherings, and with an emphasis on transformative animistic features and boats. The second major maritime

impact relates to Bell Beaker influence in southern Scandinavia, prior to the Nordic Bronze Age, and is associated with regular overseas sailing, intensified interaction across the North Sea, and trade in raw materials and exotica. By incorporating two different maritime legacies both on a practical and a symbolic level, the societies in southern Scandinavia created new maritime institutions which enabled them to enter and participate actively in the maritime exchange networks of the Nordic Bronze Age. We regard the institutionalisation of this particular kind of maritime-ness as a crucial feature, a *doxa* for the reproduction of the Nordic Bronze Age societies.

**Key words:** Bronze Age rock art, animism, fusion of two legacies, boat imagery, plank-built boats, maritime-ness, aggregation sites, overseas exchange.

#### Introduction

The focus on boats in South Scandinavian Bronze Age rock art has been a perpetual headache for archaeologists trying to force them into explanatory models biased towards terrestrial and agricultural practices (Almgren 1927; Malmer 1963; Vogt 2011). The recent turn to maritime perspectives in rock art studies (Østmo 1997; Kristiansen 2004; Nordenborg Myhre 2004; KvalØ 2007; Ling 2008) has overcome this by taking the boat images at face value, as depictions made by maritime-oriented groups heavily reliant on boats and seafaring skills. This new position enables us to explicate the regional differences within the Nordic Bronze Age not as a result of a clash of two cultures/economies, but as a new form of maritime practice, or, maritime culture in its own right that grew out of two initially different legacies. One of the advantages of this maritime practice was the capacity to enter into and partake in international exchange networks.

Our discussion is based on three premises: (1) The South Scandinavian rock art tradition (ST) evolved from the older North Scandinavian rock art tradition (NT). (2) The tradition of carving boat images spread from the north to the south at the transition to the Late Neolithic, and was quite likely accompanied and boosted by a transmission of innovative boatbuilding know-how and seafaring skills. (3) The animistic merging of boats and

animals that evolved among hunter-gatherers in the north was adopted and maintained by maritime Bronze Age groups on the Scandinavian Peninsula.

Neither of these premises is new, and both the north-south evolution and the animistic principles of the ST have been discussed by a number of authors, and most recently by Mike Rowlands and Johan Ling (2015). They argue that Bronze Age rock art could be seen as:

- (1) A legacy of the North Scandinavian rock art tradition in terms of the emphasis of animistic feature and the general need to aggregate or interact on a seasonal basis;
- (2) southern Scandinavia's entanglement in metals during the Bronze Age, which in fact triggered the entire process of creating rock art during this epoch; as an outcome of this process;
- (3) the formation of new maritime institutions; and
- (4) a general need to enter and maintain 'international' networks and alliances that inspired the rock art tradition with a pan European code of warriorhood and cosmology.

In this chapter, we intend to deepen these strands by focusing more concretely on archaeological examples showing the merging of the two different maritime traditions, and on how Bronze Age groups in the south adapted and transformed the two legacies, and thereby created the particular maritime institution that is typical of the Nordic Bronze Age, and which is reflected in the ST. Rather than seeing the groups populating the coastline of the Scandinavian Peninsula as primarily stationary agriculturalists, we see them as inherently mobile and maritime-oriented, building on and developing a form of coastal adaptation that had been established millennia earlier. It is striking, however, that boat images are not found in the Stone Age proper in southern Scandinavia, but seem to be a phenomenon that spread from the north to the south in the Late Neolithic–Early Bronze Age.

Around the transition to the Nordic Late Neolithic, and quite possibly as a side-effect of the adoption of functional metal axes, plank-built boats allowed for the crossing of open waters on a regular basis (Østmo 2005, 2009; Prescott 2009). While the use of dug-out canoes continued in the Nordic Bronze Age, the Bronze Age maritime institutions that we describe here sprang from the invention of new seagoing vessels. In the UK, a similar development is argued to be related to the Beaker phenomenon (Van de Noort 2012). The

role played by the maritime Bell Beaker culture (mBBC) when it comes to the development of such boats and the accompanying skills in southern Scandinavia is not well understood, although often taken for granted as one of the factors that strongly shaped the Scandinavian Late Neolithic. Some consider an indigenous technological evolution of seagoing plank-built vessels in northern Scandinavia to be likely (Klem 2010; cf. Carrasco 2009: 78), but as for now this builds mainly on an interpretation of the boat images themselves, for lack of any evidence of boat wrecks. In the UK, where a number of planksewn boat finds have been dated to the Bronze Age, the oldest to c. 2030–1780 cal BC, a development from hide or skin boats into more seaworthy craft with greater carrying capacity is assumed (Van de Noort 2012: 68). It is far from clear from which of the two legacies described here the plank-built seagoing vessel and the necessary nautical skills were adopted in South Scandinavia. Our discussion is not aimed at settling this question, but rather at showing the complex interplay of internal and external factors, and the potential for cross-pollination between them in a period of profound change, First, we will concentrate on the connection between the NT and the ST in terms of animal forms, boats and the location of rock art in the landscape/seascape. In the section that follows, we will focus on the maritime impact of the mBBC.

#### Taking the animal on board

Today, most scholars agree that the structure of making rock art 'as format' was transmitted from the north to the south (Fig. 3.1), although it developed in a very different way in the south (Gjessing 1936: 130; Fett and Fett 1941: 116; Marstrander 1963: 72; Helskog 1999; Sognnes 2001; Nordenborg Myhre 2004:172; Wrigglesworth 2006: 150; Bradley 2006; Engedal 2006: 178; Goldhahn 2010; Cornell and Ling 2010; Gjerde 2010). Scholars also seem to agree that the transmission of the NT format to southern Scandinavia happened during the Late Neolithic–Early Bronze Age (Goldhahn and Ling 2013). On the Scandinavian Peninsula, this was a period of dramatic change, often considered to relate to the BBC. The fact that it was not until the Late Neolithic–Early Bronze Age that boats became the predominant motif in rock art (Bradley 2006 with refs.) implies that the role and importance of boats changed with the ST (Fig. 3.2). While the iconographic and technological traditions of the

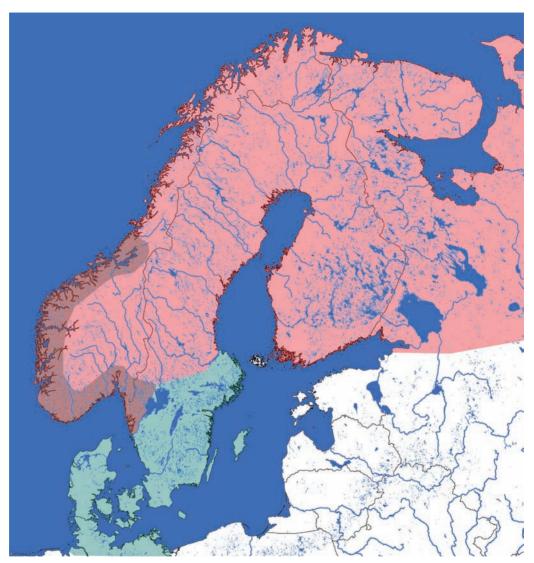


Figure 3.1. The maritime legacies of Bronze Age rock art. The first legacy relates to the North Scandinavian hunter-gatherer tradition. The second major maritime impact relates to the impact of (maritime) Bell Beaker culture in southern Scandinavia. Map from Goldhahn et al. (2010), showing the distribution of the two rock art traditions in Scandinavia. The blue area denotes the Northern tradition (NT) whereas the red area marks the Southern tradition (ST). Grey areas denote where these traditions overlap (reprinted with the permission of the author).



Figure 3.2. The ST 1700-500 BC: A legacy of the NT in terms of transformative animistic features between animals and boats and the general need to aggregate or interact on a seasonal basis. Examples taken from Nämforsen (top) and Tanum (bottom). Top right: Nämforsen, Lillforshällan G (after Dietrich Evers, source: SHFA); top left: Nämforsen, Ådalsliden (after Oscar Almgren, source: SHFA); bottom left: Tanum 12 (after Claes Claesson, source: SHFA); bottom right: Tanum 25 (after Dietrich Evers, source: SHFA).

north may be seen as a *longue durée*, potentially available for the coastal groups further south, the impact from southern Europe with the BBC was, on the other hand, more temporally restricted. We suggest, therefore, that it was the mBBC that triggered the potential of the NT legacy in the south.

In line with Rowlands and Ling (2015) we argue that the interchangeability of species seen in the ST and Nordic Bronze Age iconography rests on an animistic principle or world-view that resembles the more northerly rock art. The basic principle of animism is the transfer of properties from one being to another (Ingold 2006; Willerslev 2007; Dowson 2009; Zedeño 2009). The ability to be the same and different remains possible because of the animist principle of a common essence or soul, which is what actually constitutes the transformation from one side of the alterity divide to the other (Rowlands and Ling 2015).

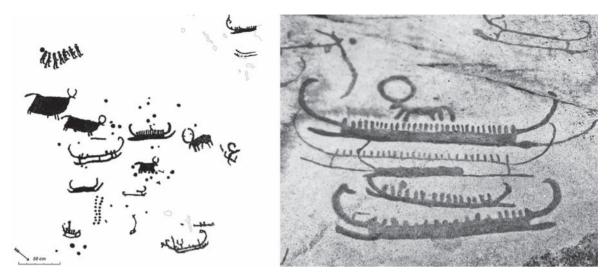


Figure 3.3. Transformations between boats and bulls from Bohuslän dated to 1600–1300 BC. Left: Tanum 351 (documentation by Tanums hällristningsmuseum Underslös, source: SHFA); right: Kville 159 (after Åke Fredsjö, source: SHFA).

Transformations between animals (elk, reindeer, seals and ducks) and boats are a common theme for the NT (Fig. 3.2). Typical also for the ST are transformations between animals (bulls, horses and ducks) and boats. In the region of Bohuslän, there are sites with bull representations on rock art panels, in close association with boats (Figs 3.3 and 3.4). Ling and Rowlands (2015) highlighted this matter and argued that these scenes narrated ritual transformations between bulls and boats. Bull-boat scenes occur on several panels in the parishes of Tanum and Kville that show boats from Early Bronze Age period Ib–II, or 1600–1300 BC (Fredsjö 1981; Fredell 2003; Ling 2008). These panels faced a seascape during the Bronze Age; some were located at the water's edge, others on elevated outcrops just at the shore (Ling 2008).

In the following we shall exemplify this phenomenon with reference to sites in Tanum. The rock art panel Tanum 12 has a scene with bulls and boats of different sizes that appears to illustrate a sequence of growing and moving bulls (Fig. 3.2), which seemingly enter or transform into a boat. This, in our opinion, clearly illustrates the close ontological connection between bulls and boats in the ST. Another panel, Tanum 25, located on

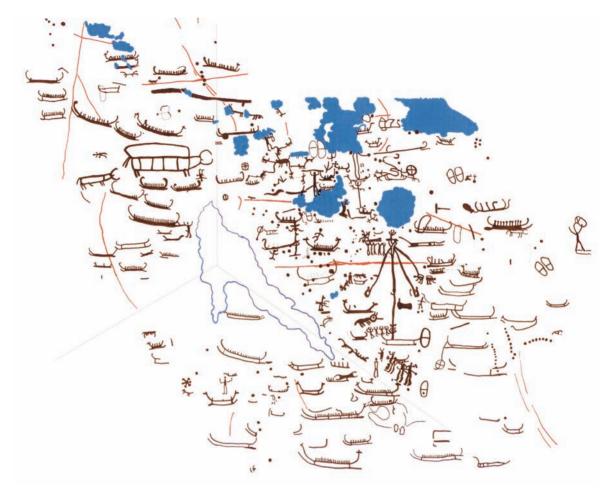


Figure 3.4. One of the most outstanding rock art panels in the Tanum area, Tanum 311. Note the spectacular combinations of bulls and boats (documentation by Tanums hällristningsmuseum Underslös, remade by Fredell 2003, source: SHFA).

the same hill, displays a cluster of boats, humans and bulls (Fig. 3.2). The most striking feature here is the bull in the lowest position with a boat-shaped body, indeed similar to the shape of the boat depicted to the right on the same panel. Above the bull is a human scene showing 'males' with phalluses in a moving sequence. Thus a 'herd' of boats and bulls seems to surround the human scene as if they were slightly different species, yet from the same herd. Thus, once again we see the close interaction between

bulls and boats on the rock art panels. Our third example is taken from the so-called Gerum panel, Tanum 311 (Fig. 3.4). The low-lying position of this panel, 14.5–16.5 m above sea level is striking, and it presents a perfect case for shoreline dating (Ling 2008). It includes some remarkable figures and combinations (see Almgren 1927; Fredell 2003; Skoglund 2012). One of the most striking features is the large bull found in the top right of the panel. It is accompanied by another bull and surrounded by a fleet of boats. The bodies of both bulls follow the shape of a boat hull. In fact, the whole scene with boats with in-turned prows/horns and bulls could be seen as a herd/ fleet on the move, staged for a special maritime event (Fig. 3.4).

We consider the dominant animal and boat forms to be transformations of each other. Specifically, the shape of the bull, as a principal animal form, transforms into a boat form, and both are joined together in groups that suggest a herd/fleet in movement. The boat may have been regarded as a fragile feature during the Bronze Age, and fixing it into the firm and permanent rock and depicting it alongside strong features or symbols such as the bull could be seen as a way to ensure the durability and safety of the journey of the boat. Moreover, some panels with typical Early Bronze Age features include depictions of bulls that seem to emanate from the cracks in the rocks. These bulls are never completely depicted, only half of the animal is ever displayed, and it is as if the rock deliberately holds back the other part of the beast. This feature could be seen as an example of the potency of the rock, and as an extension of the transformation between stone/animal and boat.

The bull-boat combination is a feature typical of northern Bohuslän during period I and into period II. In other regions, animals such as wild boars take the place of the bull (Nordén 1925; Coles 2000; Ling 2013). It seems therefore that the transformative features of the boat were articulated differently in various parts of Scandinavia in the Early Bronze Age, but could have served a similar animistic function, namely, to ensure the strength and durability of the boat and maritime ventures (*cf.* Westerdahl 2005).

In the later part of period II, the horse replaced the bull and its transformative role in larger parts of southern Scandinavian and became an integral part of the prows of the boats (Kaul 2013; Ling 2013). This impact can be seen in all regions and is a considerably more homogeneous trait in the ST (Kaul 2013). Interestingly, horse–boat transformations occur on the same panels that include bull-boat transformations in Tanum and Kville,

indicating that this is both a continuous chronological practice and a longlasting ideological theme.

# The Bronze Age metal trade and aggregation sites

Another significant aspect that needs to be stressed regarding the connection assumed here between the NT and the ST is the fact that the NT was arguably carved in connection with seasonal socio-ritual gatherings. In other words, rock art could be seen as one aspect of the hunter-gatherer groups' need to aggregate or interact on a seasonal basis. These meetings took place when there was a seasonal abundance of prey animals at specific locations in the landscape, such as seems to be the case at sites like Vingen (Sogn and Fjordane), Nämforsen (Ångermanland) and Alta (Finnmark) (Helskog 1999; Goldhahn 2002; Gjerde 2010; Lødøen 2012).

In the following we shall argue that the engagement with metals in the Bronze Age created or triggered similar, yet different, social needs to interact on a seasonal basis at maritime communicative places in the landscape (Fig. 3.5). Even if there were great differences between the interactions that took place in the NT and ST areas, the two traditions nevertheless seem to have been governed by similar practices. Possibly, at some locations, the ST was directly structured by previous rock art traditions and the history embedded in the landscape.

Based, among other things, on evidence of overseas import, it seems likely that the large Bronze Age metal workshop sites in Scandinavia functioned as market places and aggregation sites, which gathered people from far and near at certain times of the year (Melheim 2015). It is clearly not a coincidence that some of these sites are located in areas with abundant ST rock art. To illustrate this connection, we shall use the Hunn burial ground near Fredrikstad in Østfold as an example (Fig. 3.6). Hunn lies at the heart of one of the densest rock art areas in southern Norway, in the broader rock art region of Tanum-Østfold. The adjacent Skjeberg plain has 100 rock art sites within an area of 6 sq km, and immediately to the west and north of Hunn lie ST sites like Begby, Opphus and Lille Borge. With rich evidence of specialised bronze production, Hunn was most likely a regional

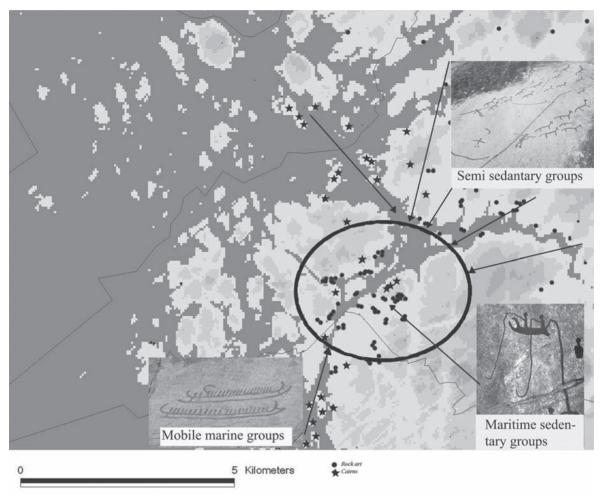


Figure 3.5. In the Bronze Age, the demand for metal created new needs to aggregate and interact at communicative maritime locations at the coast. Map of the Kville area at the west coast of Sweden with rock art (stars) and cairns (circles) illustrated with a Bronze Age shore line of approx. 15 m.a.s.l. (After Ling 2008). The communicative maritime setting of this rock art area indicates that it could have worked as an aggregation site for different groups with different aims.

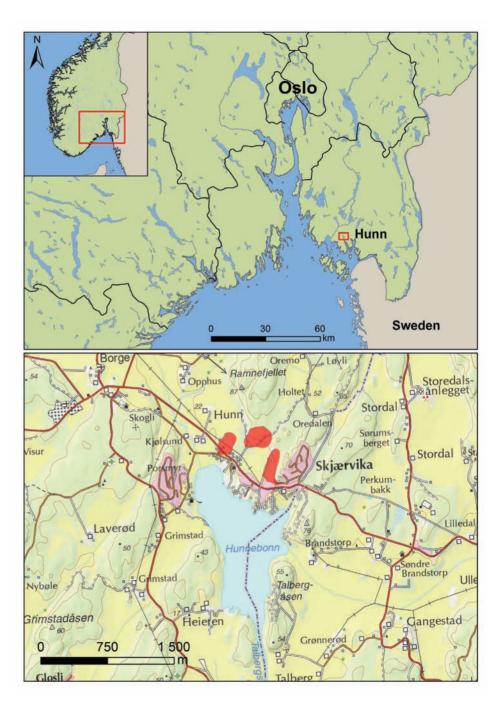
centre for craft production and trade 1300–700 BC (Melheim *et al.* 2016). The presence here of unalloyed copper is an indication of trade in raw metals to Scandinavia, which is also in a broader perspective indicated by evidence from Swedish workshop sites like Hallunda near Stockholm and Kristineberg near Malmö. Evidence of the production of metal preforms at *e.g.* Hunn and

Hallunda suggests that a further transformation of raw materials into locally accepted 'currencies' took place at these sites.

The aggregation aspect is likely to relate to natural features of the landscape. Hunn has good conditions for embarking inland on rivers and prehistoric tracks, and is situated by a protected, natural harbour, which is connected with the sea through a 2 km long narrow passage that could be monitored from the nearby cliff Ravneberget, later to become a hillfort (Fig. 3.6). A possible interpretation of the very ancient place name Hunn is that it has to do with 'catching' and relates to the nearby water basin (Hunnebunn) and it being a good fishing ground (Hoel 2015). We may ask whether this place name could also be considered in more literary terms as a place for 'catching' goods or for that matter boats. Quite possibly, the significance of the site and the name developed through time, beginning with the establishment of sites in the area when the land dried up in the Mesolithic and continuing with farms in the Late Neolithic–Early Bronze Age, and eventually developing into a central area with metal workshops, burials and ST rock art in the Middle and Late Bronze Age (Melheim *et al.* 2016).

In the Early Bronze Age, the interregional trade and especially the exchange of metals, often from source areas far away, created new needs to aggregate, quite likely on a seasonal basis and at communicative maritime locations along the coast. We suggest that some of the central rock art sites in the coastal ST rock art regions served as seasonal aggregations sites for groups with a mobile way of living, such as travellers, warriors and/ or traders (Fig. 3.5). At these sites, which we consider to be rudimentary 'ports of trade', the live models for the boats that were depicted on the rock art panels could unload their cargo and exchange finished products as well as imported raw materials. We may assume that people from a larger catchment area visited the ST rock art areas in order to maintain, reproduce or initiate socio-ritual structures of power, identity, ideology and cosmology and that the exchange of commodities and gifts may have been another crucial aspect of these meetings. In a sense, one may say that the interregional exchange networks of the Bronze Age triggered needs to interact and aggregate which were comparable to the situation in rock art aggregation sites like Nämforsen or Alta during the Neolithic, whilst the Bronze Age 'prey' that was in focus for gatherings of people from near and far was made of metal and other exotica rather than flesh and blood.

Figure 3.6. Map of Norway with the area of Hunn indicated. Hunn in Østfold, Norway has good conditions for embarking inland on rivers and prehistoric tracks. and is situated by a protected, natural harbour which is connected with the sea through a 2 km long narrow passage which could be monitored from the nearby cliff Ravneberget (Ramnefjellet), later to become a hillfort (map: Steinar Kristensen; map data: Kartverket, norgeskart.no.)



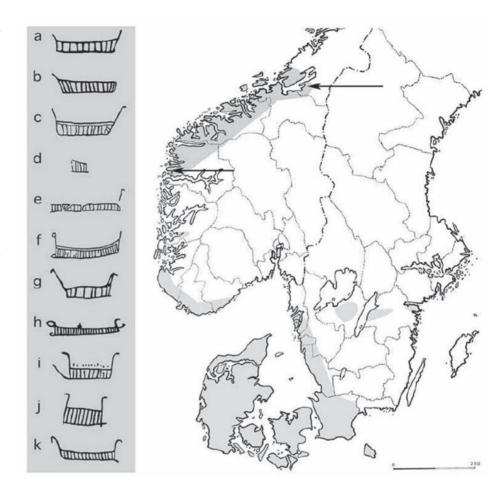
# The plank-boat revolution and the maritime impact of the BBC

Indo-European words for boats are regarded as belonging to an older substratum, a language used by indigenous groups in the areas later populated by Germanic-speaking Indo-Europeans (Østmo 1997; Wikander 2010). In other words, linguistic evidence may be considered to support the idea of a maritime legacy from the NT in the areas populated by Nordic Bronze Age groups. An indication of a continuation of contact between the NT and the ST are the panels widely spread on the Scandinavian Peninsula which show a mix of the two traditions – e.g. Åmøy (Rogaland), Bardal (Trøndelag), Sporaneset (Telemark), and Nämforsen (Ångermanland) (Hagen 1969: 120–139). However, there is no clear continuity in space between the first ST boats and older boat images, as NT boat depictions in general have a more northeasterly distribution (Gjerde 2010: 399) than the first ST boat images.

The earliest ST boat images (for convenience called the 'Krabbestig/Nag type', Fig. 3.7) appear along the Norwegian coast, in Vest-Agder, Rogaland, Sogn and Fjordane, Møre and Romsdal, and Trøndelag (de Lange 1912, Mandt 1983: 26; 1991: 334-335, Mandt and Lødøen 2004: 128, Nordenborg Myhre 2004: 172-172). Similar boat images are also known from a few panels in the Tanum-Østfold rock art region (Ling 2008: 127–130; Marstrander 1963: 65). In Bohuslän, altogether seven sites have Krabbestig/Nag boat types, all located along the coastline (Fig. 3.8). These are one site in Brastad parish (26), two sites in Kville parish (173, 66) and four sites in Tanum parish (67, 75, 484, 487). Some of these sites show several boats of the Krabbestig/Nag type; this goes for Tanum 75 and 487 (Fig. 3.9). Of special interest with regard to shoreline dating is that none of these sites is located below 20 m above sea level, and most of them at higher altitudes, at 20-27 m above sea level. The fact that no boats of Krabbestig/Nag type in Bohuslän are closer to the Bronze Age seashore is a strong indication that they, like their typological counterparts in western Norway, are likely to have been made before the Bronze Age.

Norwegian researchers have for some time argued that the Krabbestig/ Nag type boats can be traced back to the Late Neolithic and the idea that these boats represent a Late Neolithic 'substratum' and a predecessor to the first Bronze Age boats has been vividly discussed. They are often placed

Figure 3.7. The earliest ST boat images (for convenience called the 'Krabbestig/Nag' type) occur along the Norwegian coast from Vest-Agder and Rogaland to Trøndelag. Illustration from Goldhahn (2006) showing boat images from the core area (darker grey, between the arrows) in northwestern Norway: a) Auran, b) Leirfall, c) Røkke, d) Skjervoll, e) Mjeltehaugen, f) Krabbestig, g) Domba, h) Unneset, i) Leirvåg, j) Leirvåg, k) Vangdal. Reprinted with the permission of the author.



in the Early Bronze Age or more cautiously in the Late Neolithic II (2000–1700 BC) on typological grounds (Fett and Fett 1941: 112; Engedal 2006; Ling 2008: 128–130; Mandt 1991; Nordenborg Myhre 2004: 172–175, 186; Prescott and Walderhaug 1995; Sognnes 2001, 2003; Østmo 2005). The solitary position of boats of the Krabbestig/Nag type on many rock art panels, and the fact that they, as in Bohuslän, occur on higher altitudes are good chronological indicators (cf. Ling 2008). For instance, the placement at Nag in Rogaland of such boat images on the upper part of the panel, and with lower-lying period I boats, supports an early date (Nordenborg Myhre 2004: 144, 195). At the multiphase Leirvåg site in Sogn and Fjordane the conjunction between the

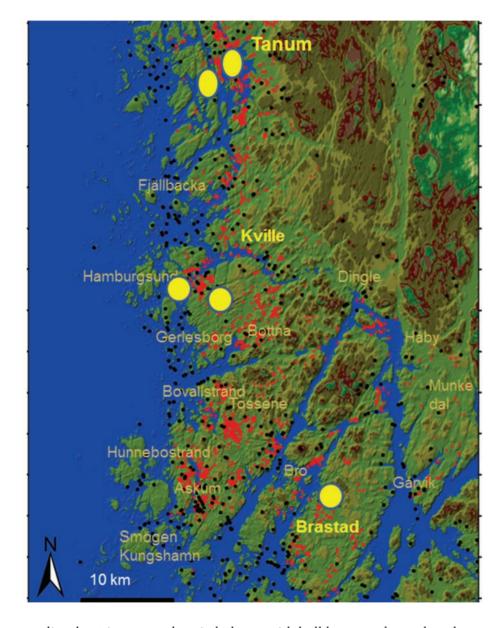
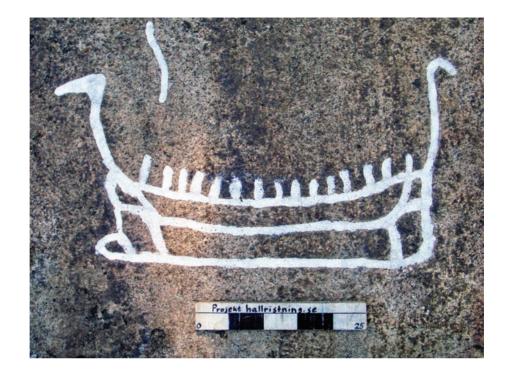


Figure 3.8.
Krabbestig/Nag
boats are also found
in Bohuslän, western
Sweden. The yellow
dots on the map
indicate the location
of these sites.

earliest boat images and period I boats with bull horns and somehow later horse-headed boats is striking. Examples of this kind of continuity are also known from sites in Tanum and Kville, always with the earliest boat type in higher-lying parts of the panel (Ling 2008: 127–130).

Figure 3.9. Rock art panel (Tanum 484) from Heljeröd in Tanum, showing a typical Krabbestig/Nag boat. Photo by A. Toreld. Source: SHFA.



The Krabbestig boats on the slabs from the Mjeltehaugen barrow on the island of Giske, Møre and Romsdal are central to this discussion (Fig. 3.7). Bordered zigzag patterns reminiscent of the Mjeltehaugen slabs occur on BBC pottery (Jensen 1973, Liversage 2003: 39, Prieto-Martínez 2008: 146–149, fig. 19, Vandkilde 2001: 338–341, 347). Through time, the non-figurative patterns on the slabs have been linked to finds from Middle Neolithic Europe (Marstrander 1963: 325, Mandt 1983: 23–25), the BBC (Østmo 2005: 70), and most recently to a group of stelae and slabs from Le Petit Chausseur (Switzerland), Göhlitzsch (Germany) and Insua (Spain) (Sand-Eriksen 2015). Interesting indeed is the identification by Anette Sand-Eriksen (2015) of a depiction of a Remedello type dagger dating to *c.* 2500 BC on the back of one of the slabs.

Based on this, the boat images may well belong in the BBC phase, or the transition from the Middle to the Late Neolithic. The many arguments posed against a BBC date, *e.g.* the size of the chambers and the assumption that they contained cremation burials (de Lange 1912: 28; Linge 2007; Mandt and

Lødøen 2004), do not necessarily affect the dating of the slabs themselves, which may have been reused or used continuously for a longer period of time. Neither can the presence of other similarly decorated stelae in western Norway be decisive (cf. Mandt 1983, Syvertsen 2002). These stelae are assumed to belong in the Bronze Age but most of them are indirectly dated, and could just as well point to the historical impact of the legacy of the BBC in this area. The tradition of making such stelae was possibly adopted from Iberian BBC/Bronze Age groups (cf. Harrison 2004). In this regard, it is of some interest that the wagon images with horses so typically seen on the somewhat later ST panels in Tanum-Østfold, e.g. vividly represented on the Begby panel adjacent to Hunn, has clear parallels in the rock art of the Iberian Peninsula. Boats, however, are exclusively found in Nordic rock art. A boat image from Unneset in Askvoll, Sogn and Fjordane is also illustrative – representing the new Bronze Age paradigm of predominant boats and a wagon drawn by two horses.

The eponymous Krabbestig rock art panel itself is situated at the inlet of Skatestraumen, in Vågsøy in Sogn and Fjordane. A nearby (burial) find of 40 amber buttons with V-perforations (Lødøen 1993, Lillehammer 1994: 90), clearly speaks of an impact from the BBC. Several, now lost, barbed and tanged flint arrowheads are reported to have come from the nearby Vingen rock art site (Østmo 2005: 75; Prescott and Walderhaug 1995), but whether they were actually BBC points has not been confirmed. However, two BBC arrowheads occurred in a similar coastal environment, on the island of Gulen further south, during excavations in 2014 (Ramstad 2014). The BBC-related finds from coastal sites in Sogn and Fjordane provide a glimpse into a historical scene of cultural meetings, and may even suggest that there was a direct link between the earliest boat depictions and BBC influence in the area.

It is plausible that the background to the change of motifs with the new emphasis on boats which we retrospectively perceive as the ST may have been a series of ground-breaking events limited in time and space. The rock art boats may, as inherent in the theory of an external origin for the Nordic boat, represent the local population's first encounters with seagoing vessels (Østmo 2005: 71). The hypothesis that the Krabbestig/Nag type boats represent a new boat type with better seafaring capacities may also explain the boom in boat depictions with the ST (Nordenborg Myhre 2004: 173). On the other hand, recalling the theory of an indigenous technological

development, it is also feasible that the boat pictures depict the local population embarking on journeys. An extension of the seagoing vessel's history back in time provides an explanation for the changes in distribution patterns at the Middle-Late Neolithic transition, notably the large-scale import of flint daggers to south-western Norway and Sweden (Apel 2001; Nordenborg Myhre 2004: 174; Østmo 2005; Prescott 2009). Judging from find distributions, BBC maritime ventures followed the Atlantic fringe (the Maritime Route), a trail that was crucial also much earlier for the spread of megaliths and stone-axe trade.

It is striking that the much older Mesolithic animal figures of western Norway, e.g. at Vingen and Ausevik in Sogn and Fjordane (Lødøen 2012), have hatched bodies very similar to the later boat images; again, perhaps showing the longue durée of the animal-boat transformation. When turned upside-down, boats of the Krabbestig type look very much like Mesolithic big game. However, the theory of continuity and a north-south development of boat imagery and technology seem to be contradicted by the boat images themselves. While typical boat images of the NT are found in an area spanning the northerly and middle parts of the Scandinavian Peninsula, and not in western Norway, the earliest boat images belonging to what may be defined as the ST are most prominently seen on panels along the western and southwestern shoreline of Norway, e.g. at sites like Leirvåg, Unneset and Krabbestig (Sogn and Fjordane), Nag and Åmøy (Rogaland) and Mjeltehaugen (Møre and Romsdal). The biased distribution of Krabbestig/Nag boat depictions indicates that another factor than the NT itself was crucial for the ST transformation.

The rock art of western Norway played centre stage in Christopher Prescott and Eva Walderhaug's (1995) theory of BBC impact and the possible immigration of Indo-European speaking people to Scandinavia towards the end of the Middle Neolithic, which arguably paved the way for the Scandinavian Late Neolithic. They maintained that in this phase, when the first boat images of the ST occur, old traditions were broken down and traditional rock art aggregations sites left behind. The potentially vital role played by BBC seafarers, the mBBC, is a 'joker' that may explain this discontinuity in space. No doubt the BBC was a very influential factor that strongly shaped Europe in the mid-third millennium BC. Firstly, the BBC was pivotal in introducing developed Bronze Age metallurgy and hence also more functional metal axes to the Nordic realm. Secondly, the Beaker

cultures profited greatly from their command of transport technologies that enabled more rapid movement – horse riding and also quite possibly seafaring, as is indicated by the distribution of BBC finds across northwestern Europe (Fitzpatrick 2011), and more clearly evidenced by finds of plank-built boats in the UK, going back to *c.* 2000 BC (Van de Noort 2012).

Based on the distribution of settlements, BBC groups were probably the first Europeans to use boats for major trade. Although no direct evidence exists for their boats, they must have been adequate to established regular inter-regional connections and commodity transport across the sea and along rivers. The potential cost advantage of the Maritime Route apparently triggered the formation of improved maritime technologies and institutions to enter macro-regional networks. That maritime groups used the sea currents is supported by the fact that currents facilitate sailing to the coasts of western Sweden and Norway (Earle *et al.* 2015). These are the areas where the highest concentrations of figurative rock art and monumental burial cairns from the Bronze Age exist.

#### Investment in maritime forces of production

The steep increase in metalwork of local manufacture in south Scandinavia after 1600 BC (Vandkilde 1996) indicates that these societies entered a commercialised trade in metals. Moreover, and most intriguing, this is also the first phase when Scandinavia seems to have imported copper from the Mediterranean world (Ling et al. 2014). From around the same period in time, common European cosmopolitan codes and features were depicted on Scandinavian rocks as never before. These 'hybrid' features may be regarded as exclusive 'social codes' or 'core values' shared over a large part of Europe. Different articulations and configurations of these codes in Bronze Age Europe are found in different media including rock art, metals, pottery and graves (Treherne 1995; Harrison 2004; Coles 2005; Kristiansen and Larsson 2005). In Scandinavia, these codes were articulated and most vividly expressed in rock art showing representations of bulls, boats, chariots, oxhide ingots, sun images and later on armed humans associated with boats (Fig. 3.10).

It is logical to assume that the ST rock art was made in connection with specific maritime tasks such as travels, trading and raids, involving

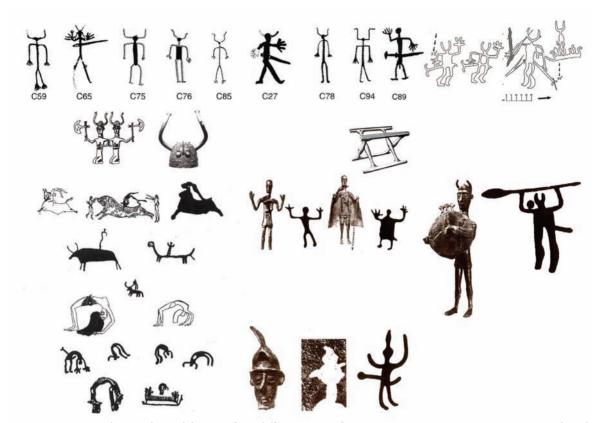


Figure 3.10. Cosmopolitan codes and features from different parts of Bronze Age Europe. Top: warriors in Spanish rock art marked with C'; Swedish rock art to the right with no marks. Mid-section: horned figurines from Grevesvænge, the horned helmet from Viksø, and the camp stool from Guldhøj, Denmark. Bottom left: Acrobats and bulls from the Mycenaean world and from Scandinavian rock art (after Winter 2002). Bottom right: Warriors on Nuragic figurines compared with Scandinavian rock art (after Sjöholm 2003).

maritime skills combined with martial arts (Ling 2008). For instance, there are numerous boat images with a crew kneeling, sitting or performing actions or poses such as raising paddles or weapons or blowing lures, possibly presenting social 'initiations', staged in the rock. Social inequality is also stressed in the ST. The clearest examples depict enlarged warriors together with numerous smaller anonymous 'collective' oarsmen. The enlarged individuals are placed fore and aft in what seem to be commanding positions, often with weapons or other items aimed, pointed or directed at an anonymous bunch of oarsmen in the mid-section of the boat (Ling 2008:

202ff). The latter form of representation may even in an active way have illustrated that certain individuals had some kind of control over boats, at least in the process of building, crewing and launching, but perhaps not in the same way when at sea.

This indicates that the Scandinavian societies had established a maritime infrastructure that enabled them to actively partake in and enter maritime exchange (Fig. 3.11). The development of plank-built boats made it possible to cross open waters on a regular basis and carry up against 1 ton

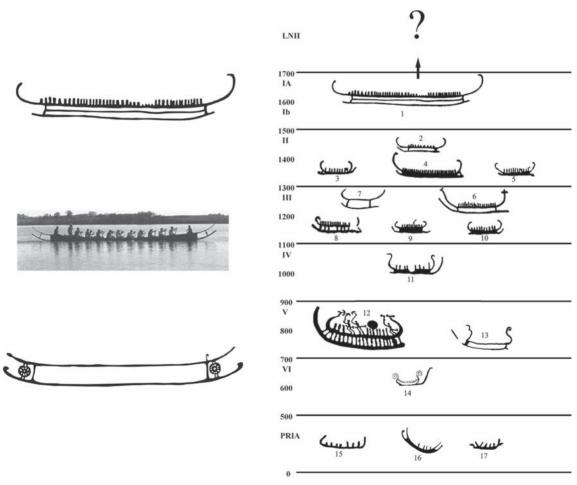


Figure 3.11. The maritime conditions for long distance trade in the Bronze Age. The rock art boats and the war canoe from Hjortspring.

of commodities (Kvalø 2007; Ling 2008; Van de Noort 2012). Tests and trials of the reconstructed boat from Hjortspring, largely similar to the Bronze Age boats depicted on the rocks (Kaul 2004; Ling 2008), show that in good weather conditions this kind of boat could be propelled about 800–100 km in a day. This means that a sea journey from west Sweden to, say, the Isle of Wight would take about 13–14 days, including stops for rest and water supply etc.

#### Conclusion

We suggest that the formation of new maritime institutions with an emphasis on building and crewing boats for maritime trading/raiding and warfare constituted a crucial feature for the societies in the coastal areas of the Nordic Bronze Age. Thus, transformative features of the boat were articulated differently in various parts of Scandinavia in the Early Bronze Age, but could have served a similar animistic function as in the NT, namely, to ensure the strength and durability of the boat and maritime ventures. Another significant aspect that needs to be stressed regarding the connection between the NT and the ST is that the NT was arguably made in connection with seasonal socio-ritual gatherings. Thus, we argue that some of the central rock art sites in the coastal ST rock art regions also worked as seasonal aggregations sites for Bronze Age groups. In a sense one may say that the overall demand for bronze and other commodities triggered needs to interact and aggregate which were comparable to the ones that occurred in Nämforsen or Alta during the Neolithic.

By incorporating the different social elements and legacies from the NT tradition on both a practical and a symbolic level the societies in southern Scandinavia created new maritime institutions which enabled them to enter and participate actively in the maritime exchange networks of the Nordic Bronze Age. The ST practice of depicting boats on rocks, but also the extensive use of boat symbolism in other media such as grave monuments and bronzes, reflect the growing importance of this new kind of maritime ideology. The fact that more metal circulated in Scandinavia between 1600 and 1100 BC than ever before probably relates to the chiefly families' capacity to invest in boats and crew. In short, individual chiefly households

with a surplus production enabling them to invest in the maritime forces of production, became the leading strata and the driving force to accumulate wealth in Bronze Age Scandinavia. Thus, a qualitative step could be seen from the Neolithic economy, based on the elite's ability to control the maritime forces of production. We regard the institutionalisation of maritime-ness as a crucial feature of the Nordic Bronze Age, and a *doxa* for the reproduction of the Nordic Bronze Age societies.

#### References

- Almgren, O. 1927. Hällristningar och kultbruk: Bidrag till belysning av de nordiska bronsåldersristningarnas innebörd. Stockholm.
- Bertilsson, U. 1987. The Rock Carvings of Northern Bohuslän: Spatial Structures and Social Symbols. Stockholm University. Stockholm.
- Bradley, R. 2000. An Archaeology of Natural Places. Routledge. London and New York.
- Bradley, R. 2006. Visions and Revisions Northern Influence in South Scandinavian Rock Art? Samfunn, symboler og identitet Festskrift til Gro Mandt på 70-årsdagen (R. Barndon, S. Innselset, K. Kristoffersen and T. Lødøen, eds): 163–170. Universitetet i Bergen arkeologiske skrifter. Nordisk 3. Bergen.
- Bradley, R. 2009. *Image and Audience: Rethinking Prehistoric Art.* Oxford University Press. Oxford.
- Carrasco, L. 2009. Maritim praksis i senneolitikum og eldre bronsealder: En analyse av båtristningene på Lista fra et maritimt perspektiv. Unpublished MA thesis. University of Oslo. Oslo.
- Coles, J. M. in association with B. Gräslund 2000. *Patterns in a Rocky Land: Rock Carvings in South-west Uppland, Sweden.* Vol. 1. Department of Archaeology and Ancient History, Uppsala University. Uppsala.
- Cornell, P. and J. Ling 2010. Rock Art as Social Format. *Changing Pictures: Rock Art Traditions and Visions in Northern Europe* (J. Goldhahn, I. Fuglestvedt and A. Jones, eds): 73–87. Oxbow Books. Oxford.
- Engedal, Ø. 2006. På bølgje og berg båten i røynd og risting. Samfunn, symboler og identitet Festskrift til Gro Mandt på 70-årsdagen (R. Barndon, S. Innselset, K. Kristoffersen and T. Lødøen, eds): 171–182. Universitetet i Bergen arkeologiske skrifter. Nordisk 3. Bergen.
- Earle, T. K., J. Ling, C. Uhnér, Z. A. Stos-Gale and L. Melheim 2015. The Political Economy and Metal Trade in Bronze Age Europe: Understanding Regional Variability in Terms of Comparative Advantages and Articulations. *European Journal of Archaeology* 18(4): 633–657.
- Fett, E. and Fett, P. 1941. *Sydvestnorske helleristninger: Rogaland og Lista.* Stavanger museums skrifter 5. Stavanger museum. Stavanger.

- Fredell, Å. 2003. Bildbroar: Figurativ bildkommunikation av ideologi och kosmologi under sydskandinavisk bronsålder och förromersk järnålder. Gotarc Serie B. Gothenburg Archaeological Thesis 25. Gothenburg.
- Fredsjö, Å. 1981. Hällristningar: Kville härad, Kville socken. Studier i Nordisk Arkeologi 14/15. Gothenburg.
- Gjessing, G. 1936. Nordenfjelske ristninger og malinger av den arktiske gruppe. Aschehoug. Oslo. Gjerde, J. M. 2010. Rock Art and Landscapes: Studies of Stone Age Rock Art from Northern Fennoscandia. Universitetet i Tromsø. Tromsø.
- Goldhahn, J. 2002. Roaring Rocks an Audio-visual Perspective on Hunter-gatherer Engravings in Northern Sweden and Scandinavia. *Norwegian Archaeological Review* 35(1): 29–61.
- Goldhahn, J. 2006. Om döda och efterlevande med exempel från Bredrör, Skelhøj, Sagaholm och Mjeltehaugen. *Samfunn, symboler og identitet Festskrift til Gro Mandt på 70-årsdagen.* (R. Barndon, S. M. Innselset, K. Kristoffersen and T. Lødøe, eds): 283–303. UBAS Nordisk 3. Bergens universitet. Bergen,
- Goldhahn, J., Fuglestvedt, I. and Jones, A. 2010. Changing Pictures: An Introduction. Changing Pictures Rock Art Traditions and Visions in Northernmost Europe (J. Goldhahn, I. Fuglestvedt and A. Jones, eds): 1–22. Oxbow Books. Oxford.
- Goldhahn, J. and Ling, J. 2013. Scandinavian Bronze Age Rock Art Contexts and Interpretations. *Handbook of European Bronze Age* (H. Fokkens and A. Harding, eds): 270–290. Oxford University Press. Oxford.
- Hagen, A. 1969. *Studier i vestnorsk bergkunst: Ausevik i Flora.* Norwegian Universities Press. Bergen and Oslo.
- Harrison, R. J. 2004. *Symbols and Warriors: Images of the European Bronze Age.* WASP. Bristol. Helskog, K. 1999. The Shore Connection: Cognitive Landscape and Communication with Rock Carvings in Northernmost Europe. *Norwegian Archaeological Review* 32 (2): 73–94.
- Henley, D. and Caldwell, I. 2008. Kings and Covenants: Stranger Kings and Social Contract in Sulawesi. *Indonesia and the Malay World* 36 (20): 269–291.
- Hodder, I. 2011. Human-Thing Entanglement: Towards an Integrated Archaeological Perspective. *Journal of the Royal Anthropological Institute* (N.S.) 17: 154–177.
- Hodder, I. 2012. Entangled: An Archaeology of the Relationships between Humans and Things. Wiley-Blackwell. Malden, MA.
- Hoel, K., T. Schmidt and Harsson, M. 2015. Bustadnavn i Østfold. Bind 14. Borge, Glemmen og Fredrikstad. Solum. Oslo.
- Jensen, J. A. 1973. Bopladesen Myrhøj: 3 hustomter med klokkebægerkeramikk. *Kuml* 1972: 61–122.
- Kaul, F. 1998. Boats on Bronzes: A Study in Bronze Age Religion and Iconography. National Museum. Copenhagen.
- Kaul, F. 2013. The Nordic Razor and the Mycenaean lifestyle *Antiquity* 87 (2013): 461–472.
- Klem, P. G. 2010. Study of Boat Figures in Alta Rock Art and Other Scandinavian Locations: With a View to Elucidate their Construction, and Discuss the Origin of the Nordic Boat. Unpublished MA thesis. University of Oslo. Oslo.
- Kristiansen, K. and Rowlands, M. J. 1998. Social Transformations in Archaeology: Global and Local Perspectives. Routledge. London.

- Kristiansen, K. 1998. Europe before History. Cambridge University Press. Cambridge.
- Kristiansen, K. 2004. Seafaring Voyages and Rock Art Boats. *The Dover Boat in Context: Society and Water Transport in Prehistoric Europe* (P. Clark, ed.): 111–121. Oxbow Books. Oxford.
- Kristiansen, K. and T. B. Larsson 2005. *The Rise of Bronze Age Society: Travels, Transmissions and Transformations*. Cambridge University Press. Cambridge.
- Kvalø, F. 2007. Oversjøiske reiser fra Sørvest-Norge til Nordvest-Jylland i eldre bronsealder en drøfting om maritim realisering og rituell mobilisering. *Sjøreiser og stedsidentitet. Jæren/Lista i bronsealder og eldre jernalder* (L. Hedeager, ed.): 13–134. Oslo Archaeological Series 8. Oslo.
- de Lange, E. 1912. Ornerte heller i norske bronsealdersgraver. *Bergens Museums Aarbok* 4: 3–33.
- Lévy-Bruhl, L. 1927. L'âme primitive, 3rd edition. Librairie Félix Alcan. Paris.
- Lévy-Bruhl, L.1925. La mentalité primitive, 4th edition. Librairie Felix Alcan. Paris.
- Ling, J., 2008. Elevated Rock Art: Towards a Maritime Understanding of Bronze Age Rock Art in Northern Bohuslän, Sweden. GOTARC Serie B. Gothenburg Archaeological thesis 49, Gothenburg.
- Ling, J., et al. 2013. Moving Metals or Indigenous Mining? Provenancing Scandinavian Bronze Age Artefacts by Lead Isotopes and Trace Elements. *Journal of Archaeological Science* 41 (1): 106–132.
- Ling, J. 2013. Rock Art and Seascapes in Uppland. The Swedish Rock Art Research Series. Oxbow Books. Oxford.
- Ling, J. and M. Rowlands, 2015. The 'Stranger King' (Bull) and Rock Art. *Picturing the Bronze Age* (P. Skoglund, J. Ling and B. Bertilsson, eds): 89–104 Oxbow Books. Oxford.
- Linge T. E. 2007. Mjeltehaugen: Fragment frå gravritual. Universitetet i Bergen. Bergen.
- Liversage, D. 2003. Bell Beaker Pottery in Denmark Its Typology and Internal Chronology. The Northeast Frontier of Bell Beakers: Proceedings of the Symposium held at the Adam Mickiewicz University, Poznań (Poland), May 26–29, 2002 (J. Czebreszuk and M. Szmyt eds): 39–49. BAR. Oxford.
- Lødøen, T. K. 1993. Et gravfunn fra sein steinalder. Arkeo 2: 4-7.
- Lødøen, T. K. 2012. Vingen: Et naturens kollosalmuseum for helleristninger. Akademika forlag. Trondheim.
- Mandt, G. 1983. Tradition and Diffusion in West-Norwegian Rock Art: Mjeltehaugen revisited. *Norwegian Archaeological Review* 16 (1): 14–32.
- Mandt, G. 1991. Vestnorske ristninger i tid og rom: Kronologiske, korologiske og kontekstuelle studier. Universitetet i Bergen. Bergen.
- Mandt, G. and Lødøen, T. 2004. Bergkunst: Helleristningar i Norge. Det norske samlaget, Oslo. Marstrander, S. 1963. Østfolds jordbruksristninger: Skjeberg. Universitetsforlaget, Oslo.
- Melheim, L. 2015. Støpeplasser og handelsplasser to sider av samme sak? *Bronzestøbning*
- *i yngre bronzealders lokale kulturlandskab* (N. Terkildsen, M. Mikkelsen and S. Bodum, eds). Yngre bronzealders kulturlandskab vol. 4. Viborg and Holstebro Museum. Viborg.
- Milstreu, G. and Prøhl, H. (eds) 1996. Dokumentation och registrering av hällristningar i Tanum 1. Tanums hällristningsmuseum. Tanumshede.
- Montelius, O. 1876. Bohuslänska hällristningar. Norstedt. Stockholm.

- Nordén, A. 1925. Östergötlands bronsålder: Med omkr. 500 textbilder och 141 pl. Uppsala universitet. Uppsala.
- Nordenborg Myhre, L. 2004. *Trialectic Archaeology: Monuments and Space in Southwest Norway* 1700–500 BC. AmS-skrifter 18. Arkeologisk museum i Stavanger. Stavanger.
- Østmo, E. 1997. Horses, Indo-Europeans and the Importance of Boats. *The Journal of Indo-European Studies* 25 (3/4): 285–326.
- østmo, E. 2005. Over Skagerak i steinalderen: Noen refleksjoner om oppfinnelsen av havgående fartøyer i Norden. *Viking* LXVIII: 55–82.
- Østmo, E. 2009. The Northern Connection: Bell Beaker Culture Influences North of Skagerak. Comments on M. Pilar Prieto-Martínez: 'Bell Beaker Communities in Thy: The First Bronze Age Society in Denmark'. Norwegian Archaeological Review 42 (1): 86–89.
- Prescott, C. and Walderhaug, E. 1995. The Last Frontier? Processes of Indo-Europeanization in Northern Europe: The Norwegian case. *Journal of Indo-European Studies* 23 (3/4): 257–281.
- Prescott, C. 2009. History in Prehistory the Later Neolithic/Early Metal Age, Norway. *Neolithisation as if History Mattered: Processes of Neolithisation in North-Western Europe* (H. Glørstad and C. Prescott eds): 193–215. Bricoleur Press. Lindome.
- Prieto-Martínez, M. P. 2008. Bell Beaker Communities in Thy: The First Bronze Age Society in Denmark. *Norwegian Archaeological Review* 41 (2): 115–158.
- Ramstad, M. 2014. Utgravingsprosjekt Halsvik. Små leirplasser, sjeldent fine funn. Steinalderundersøkelser i Halsvik, Gulen. NORARK. Available at: http://www.norark.no/prosjekter/halsvik/sma-leirplasser-sjeldent-fine-funn-steiderundersokelser-i-halsvik-gulen/[accessed 09.03.2017].
- Raphael, M. 1945. Prehistoric Cave Paintings. Pantheon Books. New York.
- Rowlands, M. 1980 Kinship, Alliance and Exchange in the European Bronze Age. Settlement and Society in the British Bronze Age (J. Barrett and R. Bradley eds): 15–155. BAR. Oxford.
- Sahlins, M. D. 1981. Historical Metaphors and Mythical Realities: Structure in the Early History of the Sandwich Islands Kingdom. University of Michigan Press. Ann Arbor.
- Sahlins, M. D. 1985. Islands of History. University of Chicago Press. Chicago.
- Sahlins, M. D. 2009. The Stranger King, or the Elementary Forms of Political Life. *Indonesia* and the Malay World 36 (105): 177–199.
- Sand-Eriksen, A. 2015. Mjeltehaughellene et klokkebegeruttrykk? Stil som uttrykk for sosial identitet. MA thesis, University of Oslo. Oslo.
- Sjöholm, Å. 2003. Scandinavian Rock Carvings and Sardinian Bronzes. *Adoranten* 2003: 35–46.
- Skoglund, P. 2012. Culturally Modified Trees a Discussion Based on Rock-art Images. Image, Memory and Monumentality: Archaeological Engagements with the Material World. Papers in Honour of Professor Richard Bradley (A. Jones, J. Pollard, M. J. Allen and J. Gardiner, eds). Oxbow Books. Oxford.
- Sognnes, K. 2001. Prehistoric Imagery and Landscapes: Rock Art in Stjørdal, Trøndelag, Norway. Archaeopress. Oxford.
- Syvertsen, K. J. 2002. Ristninger i graver graver med ristninger. MA thesis Universitetet i Bergen. Bergen.

- Thrane, H. 1990. The Mycenean Fascination: A Northerners' View. Orientalisch-ägäische Einflüsse in der europäischen Bronzezeit: Ergebnisse eines Kolloquiums (T. Bader, ed.): 156–175. Römisch-Germanisches Zentralmuseum. Habelt. Bonn.
- Van de Noort, R. 2012. Exploring Agency behind the Beaker Phenomenon: The Navigator's Tale. *Background to Beakers: Inquiries into Regional Cultural Backgrounds of the Bell Beaker Complex* (Fokkes, H. and Nicolis, F. eds): 61–79. Sidestone Press. Leiden.
- Vandkilde, H. 1996. From Stone to Bronze: The Metalwork of the Late Neolithic and Earliest Bronze Age in Denmark. Jutland Archaeological Society Publications XXXII. Aarhus.
- Vogt, D. 2011. Rock Carvings in Østfold and Bohuslän, South Scandinavia: An Interpretation of Political and Economic Landscapes. Novus Press. Oslo.
- Westerdahl, C. 2005. Seal on Land, Elk at Sea: Notes on and Applications of the Ritual Landscape at the Seaboard. *International Journal of Nautical Archaeology* 34: 2–23.
- Wikander, O. 2010. *De indoeuropeiske språkenes historie: Et tre med mange grener.* Transl. Lars Nygaard. Pax forlag. Oslo.
- Willerslev, R. 2007. Soul Hunters: Hunting, Animism, and Personhood among the Siberian Yukaghirs. University of California Press. Berkeley.
- Wrigglesworth, M. 2006. Explorations in Social Memory Rock Art, Landscape and the Reuse of Place. Samfunn, symboler og identitet Festskrift til Gro Mandt på 70-årsdagen (R. Barndon, S. Innselset, K. Kristoffersen and T. Lødøen): 147–162. Universitetet i Bergen arkeologiske skrifter. Bergen.