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Ships on Stone

A study in the chronology of Bronze Age and Pre-Roman Iron Age ship carvings in Hordaland, Western Norway

Introduction

This article discusses dating of ship representations at Flote 1 and Bakke 1 rock art sites, Hordaland, Western Norway. Studies by Mandt (1972; 1991) have been influential in dating of both ship and other renderings within the region. Mandt's studies have in turn drawn upon work by Marstrander (1963; 1964) and Glob (1969) among others.

Increasingly, recent PhD studies by Gjerde (1998) and Wold (2002) have drawn upon research into typology by Kaul (1998). Kaul (1998; 2006) in turn builds on the work of Glob and suggests Late Bronze Age styles of representation from the corpus of ship renderings found on Danish and Southern Swedish bronze razors. Shore displacement has been applied to the Alta and Vingen Mesolithic rock art sites (Sognnes 2003). Study by Ling (2008) in Sweden has suggested significant altitudinal variations in ship representations in Bohuslän, Sweden. The tentative chronology that has been constructed from the altitudinal distribution of ships in the landscape has broadly confirmed the seriation by Kaul.

The chronologies of Kaul and Ling are used in combination in the study of Bakke 1 and Flote 1 to suggest dates for ship styles that are similar to those in Sweden. The terrestrial research by Mandt (1991: 146), Østmo (Østmo, 1991) and Sognnes (2001; 2006) are used to suggest the placement of ship representations, arguably, which cannot be classified with the same certainty within the chronologies of Kaul and Ling.

This study, incorporating detailed individual investigative fieldwork in Scandinavia in Summer 2009, suggests a more nuanced approach to the ship chronology of Hordaland.

Bakke 1

The panel is one of six situated in close proximity to each other (Gjerde 2000: 3). Bakke 1 contains the greatest number of carvings of any site in Hordaland (Mandt & Lødøen 2010: 203). Carvings are found on two humps of bedrock, a schist with quartz veins running along its length (Figure 6). The panel has a West facing aspect on an Eastern slope of the Hardanger fjord, between approximately 52m and 56m above present day sea level. The site is isolated from its surroundings (Gjerde 1998: 82) situated within a long hollow leading toward the narrow valley formed by the River Storelvi, which flows into the sea from Herandsvatnet, located above the site.

Bakke 1 is mentioned and documented in a number of works (Bakke 1971; Bøe 1925; Bøe 1932; Gjerde 1998; 2000; Mandt 1972; 2010; Wold 2002) and several fieldwork programmes have been conducted. Gjerde (1998: 34) suggests more carvings may lie buried under the soil in the immediate vicinity. Removal of a section of earth and vegetation for conservation work in 1998 and 2000 revealed more carvings, and the rock previously referred to as Bakke 4, was found to be part of the same area of bedrock as Bakke 1 (ibid). Therefore, since fieldwork in 2000, the carvings of Bakke 4 have been amalgamated with those of Bakke 1 (Gjerde, 2000). A revised tracing showing results of most recent research at the site has

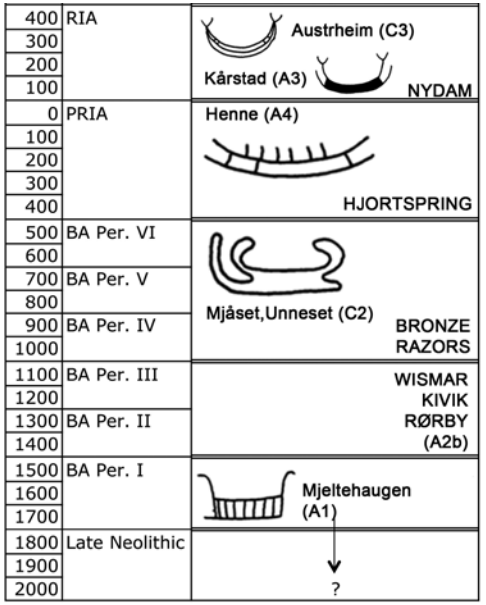


Figure 1: Mandt's classification and typology for ship representations in Sogn og Fjordane and Sunnmøre (after Mandt 1991: 266; 329)

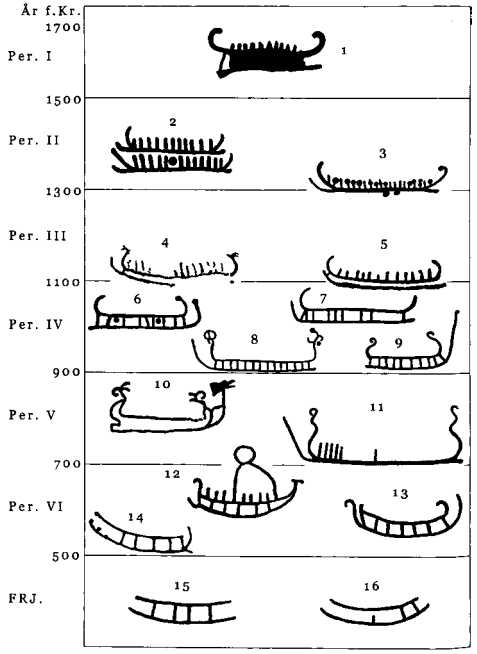


Figure 3: 'Chronological schema over Danish ship carvings' (after Kaul, 2006: 167)

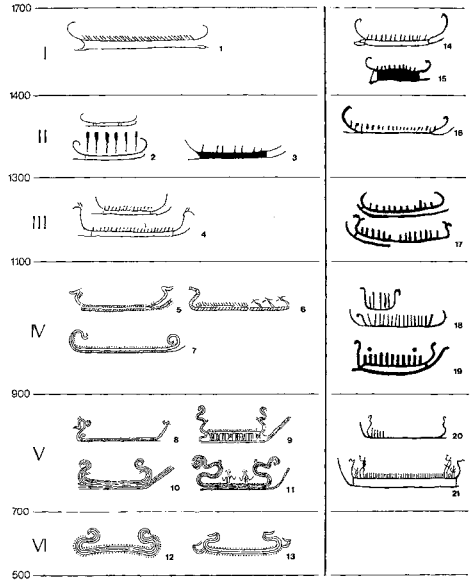


Figure 2: Kaul's ship chronology showing the 'chronological-typological development of Nordic-Bronze-Age ship-renderings' (after Fig. 53 Kaul, 1998: 88)

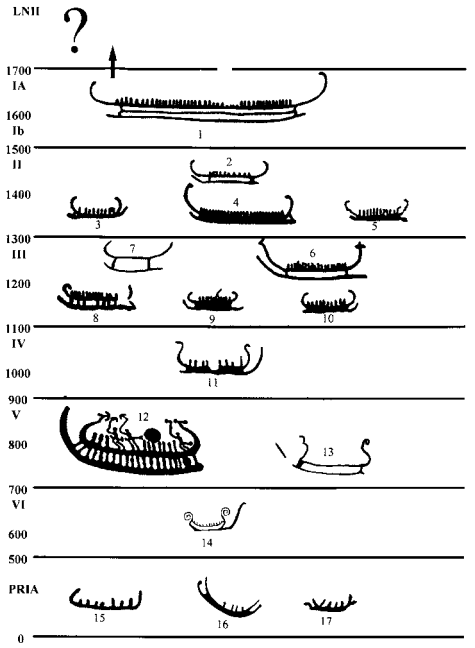


Figure 4: Ling's tentative chronology of ship renderings in relation to shore displacement (after Fig. 7.35 in Ling 2008: 105)

been under preparation since 2000 (ibid: 10). In 2009, when this case study was instigated, no new tracing of the whole panel was in press. Therefore, the basis for this analysis are the two tracings and two photographs from the programme of work conducted by Mandt in 1972 and Gjerde in 1998 and 2000.

The dating of carvings at the site is addressed in depth in Mandt 1972. Mandt, after Marstrander 1964, interprets elements within ship carvings #38, #63 and arguably #30 as representations of stylized lur-blowers (Mandt, 1972: 149) assigning dating to Period IV-V of LBA (900-500BC).

The earliest ships at Bakke 1: Early Bronze Age

Carvings #30, #32, #38, #67, #92 and 'unnumbered 1' represent the second most frequent style at Bakke 1. Inward curving prows, some ending in dots firmly place dating within Periods I and II of EBA. Close associations can be drawn between the keel extensions, prows and stabiliser of #66 with ships on the kerb stones of the Sagaholm barrow, Skåne, Southern Sweden. The similarity between #66 and kerb stone #32 at Sagaholm is particularly striking. This comparison suggests an EBA dating within Period II for #66 and also #61.

Figure 5: Location of Bakke 1 and Flote 1 rock art sites and additional sites visited during Summer 2009 fieldwork as discussed in text within the area of South and Middle Hordaland (map: Fonnakart)

Figure 6: View from highway at Bakke looking West, over an apple orchard, in the direction of Sæverhelleren rock shelters (right side of picture) and across the Hardanger Fjord (photo: J.Dodd)

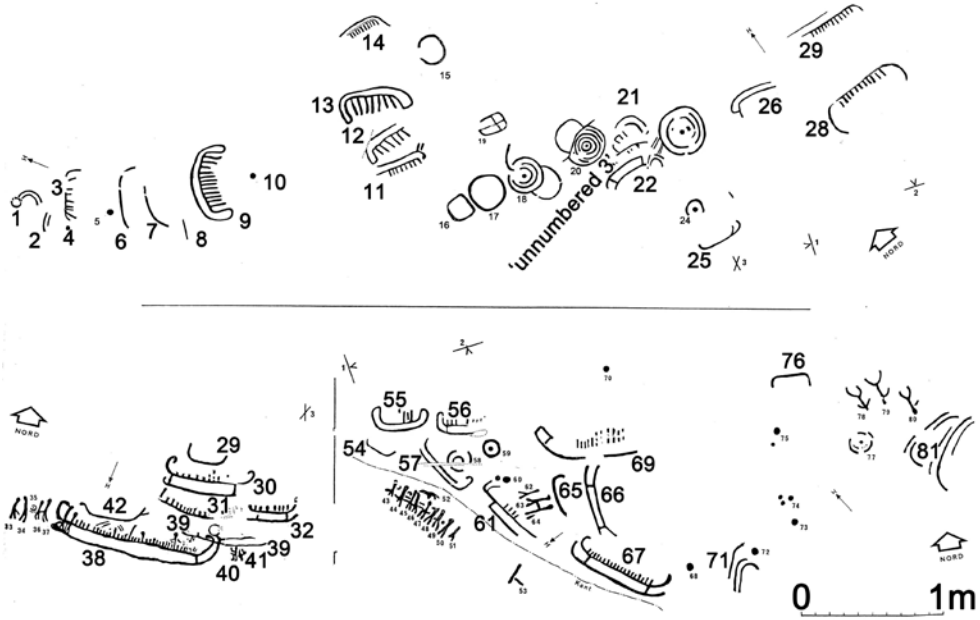


Figure 7: Documentation of Bakke 1 rock art panel (after Mandt 1972: pl. 30)

Figure 8: Supplementary tracing of new carvings discovered at Bakke 1 during fieldwork by Gjerde (1998) immediately East of area documented in Figure 7

Creation within EBA for #38, the largest ship at Bakke 1, has implications for dating of all vessels represented on the Bakke panels by Mandt (1972), who references Marstrander's study (1964), stating human figures within the crew are a predominant feature of LBA. With the added human figures removed #38 would closely resemble the other seven examples at Bakke 1 with recurving, semi-circular prows with EBA dating. Differences in the depth of carving propose separate creation dates for the couple in the bows of #38. Coles suggests the ship overlies the human figures, forming a 'procession' totalling three couples, incorporating four adjacent carvings in addition to the couple within #38 (Coles 2003: 219). While the human figures are identified by Coles as separate from #38 and connected to the human couples adjacent, a site visit in August 2009 suggests an alternative interpretation of the superimposition. Figure 10 indicates the human figures have been incised into the ship. Therefore #38 is older, not younger than the LBA couple, and EBA dating can be contended. Arguably, elements of the ship have been incorporated to form the human figure on the right of the picture. It is unlikely, given the expanse of rock the creator could have chosen, that this was an act attached without symbolism.

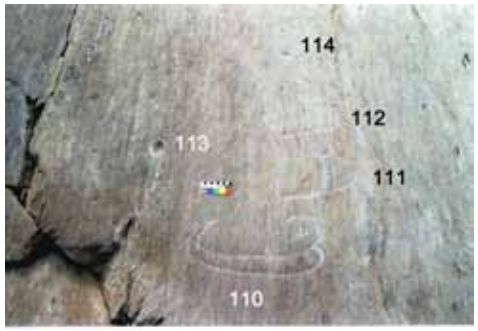


Figure 9: Supplementary photographs of new ship carvings discovered at Bakke 1 during fieldwork in 2000 (photographs: after S.Gundersen in Gjerde 2000: 4)

Added LBA human figures and compositions within #38 argue a case for a biography of reuse and renewal. Within this study, analysis in all periods has assumed in many cases that each ship carving was fully complete at creation. Understanding the role of reuse and addition within Scandinavian rock art is critical to discussions of dating as addition of

Figure 10: Ship and couples at Bakke 1 (photo J. Dodd)

stylistic characteristics, particularly prows, have been demonstrated to be significant in Rogaland, immediately to the South of Hordaland (Nordenborg Myhre 2004) and also within the Tanum region, at the Sotetorp site, Sweden (pers. comm., Milstreu: July 2009). In depth investigation of this aspect could potentially hint toward social and cognitive implications for prehistoric societies in Scandinavia. Study on a large scale, would prove highly informative as to whether a preference is demonstrated for certain characteristics of ships, or indeed other figures. Combined with results of dating, a powerful role of parts, wholes and fragmentation within rock art, using theoretical principles developed by Chapman and Gaydarska (2006), may be suggested in the future.

Further significance of #38 over the other six examples may be suggestive of composition. Wold (2002: 114) suggests #39, located at the stern of #38 is a boat striking through #38. However, the photographic detail, together with close on site examination cannot with certainty verify this conclusion. Clear breaks in the carving can be felt on either side and between the prows of #38, suggesting the carver took care to avoid #38. Arguably, these lines propose an horizon, land or shoreline, perhaps the fjord. The presence of Mesolithic and Late Neolithic rock art sites visible from Bakke 1: Vangdal 1 and 2, may suggest #38 is sailing figuratively and metaphorically across the fjord from these older sites. Whether this is evidence of ritual or myth is uncertain, as with this entire interpretation of the scene. The ring situated above the stern of the prows may also be a part of this composition as a sun symbol. The possibility also exists that the human figures form part of the composition. See Figure 11 below.

Advancing the role of ship carving within the LBA-PRIA transition:

joined prows and keel extensions: carvings 9, 11, 12, 13, 14, 21, 26, 27, 55, 56, 57, 69 and additionally carving 110

Ships with joined prow and keel extension at either end (9 examples) or both ends (3 examples) are the most predominant style of ship carving at Bakke 1. Mandt associates ships with joined prows and keel extensions with the 'Austrheim ship' (Figure 12) found on a standing stone on the shores of Gloppenfjord, Sogn and Fjordane, classified C3 in Mandt's typology. Decoration on a single pottery fragment found during excavation within the pit fill around the stone (Skjelsvik & Straume 1957) implies a more recent date range (within the Migration Period: 300-400AD) than proposed from evidence highlighted at Berge, Dalbo 1 and T249:1 sites, which contend earlier dating. Kaul (1998: 107-10) questions the investigations of Mandt, Østmo and Sognnes into the Austrheim ship, arguing the Austrheim represents a separate tradition with different symbolism in the Migration Period, with no links to previous periods. However, a case can be made from stylistic and excavated evidence examined below, for joined prows and keel extensions beginning in Periods V-VI of LBA and continuing into the PRIA, where the majority of carvings with are likely to have been created, The possibility of an extension within Western Norway through the Roman Iron Age and into the Migration Period remains, but a significant body of evidence across Scandinavia argues for earlier creation. Whether or not this style of carving died out is still questionable.

The Berge site, discovered in 1998, has been subject of a recent programme of excavation and documentation. Typologically, the majority of the ships are classified in Mandt's typology as type C2 and dated to Period IV-V of LBA (1100-700BC). However, examination of carving #21, (see Fig. 10 in Lødøen 2006, *Adoranten* 2006), displays joined prow and keel extension as with carvings at Bakke 1.

The carvings are located on a South-facing vertical cliff face, fronting a small arm of the Hardangerfjord. Shore displacement suggests during PRIA that the area at the base of the cliff was at or near the tidal zone (Romundset 2005; Vasskog 2006). During this time there were periods of sporadic occupation with fires being lit near the base of the cliff, one on top of another. These were embedded within beach deposits (Lødøen 2006: 15).

Figure 11: Possible composition on the Bakke 1 rock art panel (photo: J. Dodd)

Figure 12: The 'Austrheim' ship at Austrheim, Gloppenfjord, Gloppen Kommune (photo: J. Dodd)

The earliest obtained date from Fireplace C, the lowest fireplace, suggests an earliest date of 400BC, during the transitional period from Bronze to Iron Age. A case could be made within this transitional phase in Norwegian prehistory that older styles of ship carving may have persisted, depending upon social ties, networks and beliefs of local people.

Lødøen (2006:16) suggests the rock art and 'fireplaces' may not be contemporary. However, presently unpublished further excavation around panels evidencing ships with joined prows and keel extensions, appear to cluster within the PRIA (Lødøen pers. comm., 2009). Forthcoming research by Lødøen is likely to contribute further to this debate.

Following parallels between Bakke and #21 at Berge, similarity can in turn be drawn to PRIA ship carvings studied by Østmo (1991) and Sognnes (2006). Østmo, from study of the Dalbo 1 panel, Askerhus Kommune, Southern Norway, observes the prows of ships are joined together and rounded at either one end (4 examples) or both ends (3 examples). The remaining ships at Dalbo 1 have separated prows and keel extensions. Østmo (1991) and Sognnes (2006) both highlight the general similarity of ship carvings with joined prows and keel extensions at Dalbo 1 with examples at Bjørngård 2, in Stjørdal, Nord-Trøndelag; Kårstad and Austrheim, Nordfjordied, Sogn and Fjordane. The altitude of ships with curved, upturned hulls and/or bifuricated stems in the Tanum region has been demonstrated by Ling (2008) to support stylistic evidence examined by Østmo in Askerhus Kommune, Southern Norway.

On the Tanum 249:1 panel in Kalleby, Bohuslän, Sweden, two ships, one of which is unfinished, exhibit rounded joined prows, keel extensions and crew strikes similar to #26 at Bakke 1. One of the ships is superimposed, cutting into a further ship whose style is dated within Kaul and Ling's chronologies to the very end of the LBA between Periods V and VI. Therefore, the ship with joined prows and keel extensions is younger than the ship dated to Period V-VI and can be dated in this context at earliest and within Period V-VI of LBA. Carving as part of the LBA/PRIA transition or PRIA is equally possible. Consequently, the T249:1 panel supports dating suggested elsewhere from climax Bronze Age to PRIA.

At Bakke 1 the bows, keel extension and prow joining at a point in carving #110 make a case for similarity with the Austrheim ship and also vessels at Begby, Østfold, Norway, and Madsebakke, Bornholm, Denmark. Association toward ship #12 at Madsebakke within Kaul's 2006 chronology from Bornholm (Figure 3) inform LBA dating within Period VI.

Pre-Roman Iron-Age ships

Carving #3 suggests parallels with carvings at Dalbo 1, Askerhus, Southern Norway. While Østmo (1991) and Kaul (1998: 108-9) suggest dating of ships without closed prows at Dalbo 1 should be within the LBA/PRIA transition, altitudes obtained by Ling for the lowest situated examples within the Tanum region (carving 17 in Figure 4) support carving within PRIA. Carvings #25, #111 and 'unnumbered 3' show similarity with #3. #42 displays a bifuricated stem and #22 has an upward sloping hull and stems, all indicating PRIA dating within Kaul and Ling's chronologies. Mandt's classifcation type A4 supports concordant dating.

Ships with uncertain dating at Bakke 1

A number of ship carvings remain undated in this study. These are all single line ships including carvings #2, #6, #7, #8, #54, #65, #71, #76, #81, #93 and #94. Whilst some may represent unfinished or severely weathered carvings, others possess ambiguous stylistic details which could suggest both an early or late placement within all three chronologies.

Flote 1

At Flote 1 the carvings are found on a very large block, known locally as the 'Bruteigsteinen', that has been transported by glacial movement from higher elevations down the valley sides. The panel is steeply angled, facing South West down the valley. The site has a wide view over a large proportion of the Stordalvatnet, a long, narrow freshwater lake. The panel is prominently visible from the facing shore of the lake. The Stordalvatnet is unusually sheltered by mountains on all sides. The saltwater Åkrafjord lies on the far side of the mountain on the opposite side of the lake. 83 carvings (Vevatne 1996: 122) are located 40m above the Southern extremity of the lake (Mandt 1972: 21). Flote 1 exhibits a maximum of 13 ship renderings.

Examination of other glacial debris covering most of the surrounding valley sides suggests that the rock type upon which the Flote 1 panel is carved differs from the majority of other glacially transported blocks, which do not exhibit veins of quartz. It is of interest to note both Flote 1 and Bakke 1 share a similar preference for a surface with quartz veins. Situation and superior size also may have played a role in site selection.

The site has been subject to a number of fieldwork programmes with documentation by Mandt (1972), and further figures identified by Vevatne (1996) within a revised tracing (Figure 14). Mandt (1972: 149) identifies lurs within ships carvings #3, #10, #13, #15, #26, #41 and #45, proposing dating as at Bakke 1 within Period IV of LBA. However, ships have not been the primary focus of previous investigations into dating.

LBA carving activity at Flote 1 has been proposed for the joined spirals of #5, suggesting parallels with a bronze neck ring discovered within a burial mound (Vevatne 1996: 78) less than 100m from the Helgaberget rock art site, on the Stødleterassen, an area of multi-period activity above Etne, 14km down the Stordal valley. Helgaberget consists of over 200 figures, mainly cup marks, but also rings and spirals. Gjessing and Marstrander have proposed dating to Bronze Age Period V for the neck ring (Gjessing and Marstrander in Vevatne, 1996: 78).

Vevatne (1996) draws comparisons with British Neolithic rock art material to suggest Neolithic dating of the circles, cup marks, rings and spirals at both Helgaberget and Flote 1. However, a possible superimposition of concentric circle carving #9 over ship carving #10 (emphasised for clarity, Figure 14), identified during my site visit in August 2009, may suggest this style of ship representation, dated in this study to LBA, is older than the concentric

Figure 13: Flote 1 or 'Bruteigsteinen'. Large glacial erratic lying on moraine above Stordalvatnet beside waterfall and stream flowing from Flotevatnet to Stordalvatnet (photo: J.Dodd)

ring in this instance, therefore possibly questioning parallels made by Vevatne.

Dating of ships at Flote 1

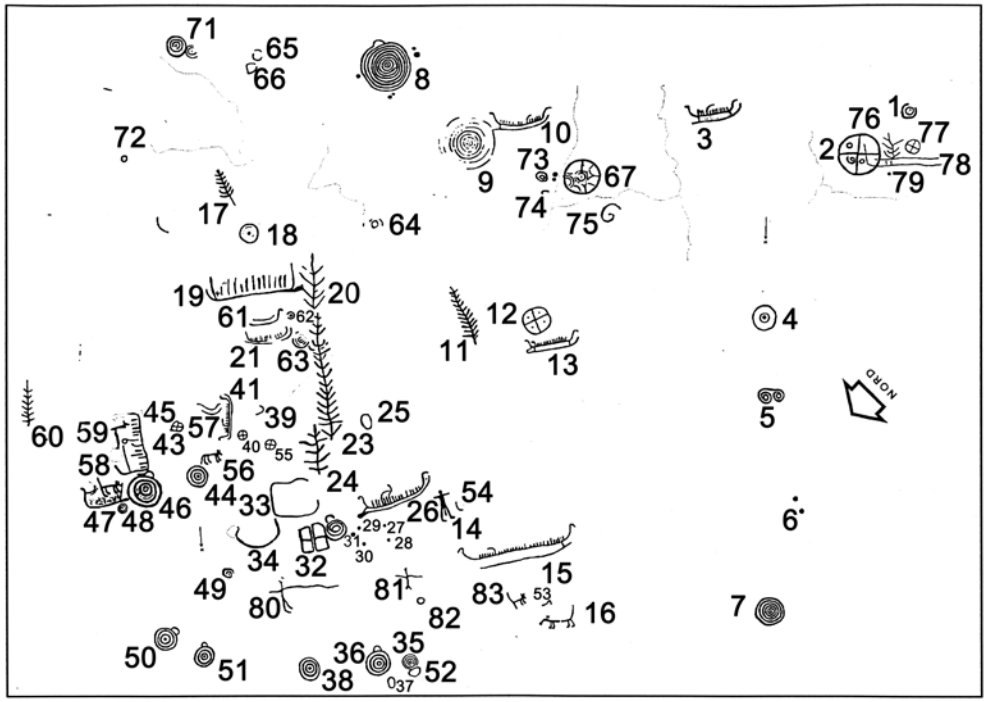
Excluding #57, of uncertain date, all remaining 12 ships at Flote 1 indicate creation within the broad time span of the LBA. Separate styles with associated dating have been identified.

Out-turned prows and stylised animal heads of #3, #10, #13, #15, #26, #41 and #61 are dated within the LBA, both first appearing in Ling and Kaul's chronologies during Period IV and throughout the entire LBA. Excepting #61, six ships evidence lurs and stylised lur blowers which further suggest creation within Period IV of LBA (1100-900BC). No superimpostion of lurs and their performers upon the ship are evident, as in the case of #38 at Bakke 1, hence confirming Period IV dating by Mandt.

Considering the number of ships and motifs dating to LBA on the Flote 1 panel, the curve and near symmetry in hull and prows of #21 may represent an intermediary between LBA-PRIA examples at Bakke 1 and LBA ships at Flote 1. At the Northern end of #21 the keel line does not curve upwards as at the Southern end, suggesting stern and bow respectively, consequently differing from ships with joined prows and keel extensions at Bakke 1. Similarly, at the bow of #26, prow and keel extension almost join with a single cup mark between the two lines. Further features in common can be seen in the bows and sterns of #26 and #13, from Period IV, both bows evidencing out turned but not joined stems with sterns exhibiting emphasised stabilisers and lur blowers. Consequently, LBA dating is suggested for both #21 and #26.

Vevatne (1996) suggests an LBA dating for all six tree motifs at Flote 1, including the example of contemporary execution with #78. Conversely, Ling and Kaul 's analyses would suggest from the vertical, upturned keel extension of #78, placement within and after Period III, MBA. #2, a sun cross containing two circles and a spiral is superimposed over #78 and represents one of two potentially contemporary events within the LBA, substantiating LBA dating of #78.

Figure 14: Flote 1 tracing (after Vevatne 1996: pl.6)



Analysis

Statistical analysis was used in the assessment and comparison of dating the ship carvings from the two case study sites, to construct the data table in which data was grouped, sorted and filtered, producing pie charts and histograms. Specific phases are proposed at both sites, two of which are evident at Bakke 1 within EBA I-III (1800-1100BC), then onwards from Period V or VI (900-500BC) into the PRIA (500-1BC), whereas there is only one at Flote 1 from Period IV to end of the LBA (1100-500BC).

Figure 15 combines both detailed information from specific periods and the broad phasing at Bakke 1. 24% exhibit stylistic characteristics suggestive of an EBA date, whereas almost twice as many carvings, 47%, propose a LBA or PRIA date. The significant number of ships with uncertain dating at Bakke 1 could alter or accentuate trends. At Flote 1 all dated representations focus within the LBA, motifs from Period IV total 72%, with later periods of the LBA contributing 21%. Ling suggests in Bohuslän from the altitudinal distribution of ship styles within each period that the largest number of examples are found within Periods V and VI. The number of ship styles dating to each period at the case study sites may demonstrate a similar preference within LBA, extending through the transition to the PRIA in Hordaland.

Conclusion

This study has applied the chronologies of Mandt (1991), Kaul (1998; 2006) and Ling (2008) to ship representations at the Bakke 1 and Flote 1 rock art panels within Hordaland, Western Norway. Comparisons undertaken do not indicate that Mandt's chronology has been more or less significant than that of Kaul and Ling. The utilization of all three chronologies has identified and placed either groups or individual vessels within phases of the EBA (1700-1100BC), LBA (1100-500BC) and PRIA (500-1BC). Statistical analysis has demonstrated intensification in the number of carvings during the LBA and PRIA. Broader scale exploration within Western Norway would assess the wider validity of EBA, LBA and PRIA emphases together with earlier ship carving traditions.

Case studies and statistical analysis within this paper propose the chronologies of Kaul and Ling remain largely valid outside of the areas from where they have been originally derived. This analysis demonstrates broad concordance with dating proposed by both Mandt, Kaul and Ling, yet at the same time acknowledges that Kaul and Ling have been able to further identify and date sub-phases suggested from differing styles of ship representation as evidenced on the case study panels.

The group of vessels at Bakke 1 exhibiting joined prows and keel extensions have strongly

		Bakke 1	Flote 1
LN		Zero	Zero
EBA	EBA I-II	5	Zero
	EBA II	2	Zero
	EBA III	2	Zero
	Other EBA	1	Zero
LBA	LBA IV-VI	Zero	1
	LBA IV	Zero	7
	LBA V-VI	Zero	4
	LBA VI	1	Zero
	LBA-PRIA	12	Zero
PRIA		7	Zero
uncertain		12	1

Figure 15: Periods and phases identified at the case study sites

influenced the results of this study, but fall outside classification within Kaul (1998: 2006) and Ling's (2008) chronologies. Although within Bohuslän, Sweden, an example at the T249:1 panel demonstrates the presence of joined prows and keel extensions, neither Kaul nor Ling examine the style where superimposition of this carving indicates creation around or after 900BC (Period V). The dating within this paper of ship representations exhibiting joined prows and keel extensions, could instigate debate in the context of Kaul and Ling's chronologies.

Mandt's (1991) Migration Period (300-400AD) dating of the 'Austrheim Ship' in Sogn and Fjordane, which similarly exhibits joined prows and keel extensions, is in dispute. For instance, Sognnes (2006) contends continuity from beginning of PRIA (500BC) in opposition to Østmo (1991) and Kaul (1998: 107-10).

The hypothesis constructed in this thesis for ships with joined prows and keel extensions has placed emphasis on the contribution of recent and forthcoming research by Kalle Sognnes (2001; 2006; pers. comm., 2010) in Stjørdal, North Trøndelag and Trond Lødøen (2006; pers. comm., 2009) at Berge, Hordaland. In particular, examination of research from the Berge site presents evidence of ships exhibiting joined prows and keel extensions being dated earlier than proposed by Mandt, within or after LBA Period V-VI (900-500BC) to at least the end of PRIA (1BC).

In conclusion, evidence from rock art studies and excavation would appear to shift toward a more nuanced understanding of the expanse and importance of rock art, which may possibly include the Årsand rock paintings within the LBA and PRIA in Hordaland.

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Note

This article is based upon my BA (Hons) Archaeology dissertation, Durham University 2010.

Acknowledgements

I am grateful to the following whose resources made possible the fieldwork in Summer 2009: Gerhard Milstreu and the SSfPA, Liv Helga Dommasnes, Sigrid Gundersen, Trond Lødøen and Kalle Sognnes. Last, but not least, Dr Marga Díaz- Andreu, Durham University for her guidance and introductions to colleagues.

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